Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

For Quarter 2 2016, which spanned from April 1, 2016—June 30, 2016, there were 9,188 incidents reported to the Indiana Trauma Registry at the Indiana State Department of Health. There were 98 hospitals that reported data, of which 10 were level I or II trauma centers, 9 were level III trauma centers and 79 were non-trauma centers. There were 14 hospitals that either started to report again or were new to reporting during this quarter compared to the previous quarter, while 9 hospitals dropped off from reporting. A map of the state with the reporting hospitals can be found on page 17. Trauma centers represented 62% of the data. There were 2,878 incidents reported for April, 3,100 reported for May, and 3,210 incidents reported for June.

The content of this report has changed due to suggestions and additions requested by the Indiana State Trauma Care Committee at the October 21, 2016 meeting. Explanations of the changes requested and adapted from the ISTCC meeting can be found on page 18.

Some general reminders include that the blue columns represent an Indiana average, red columns represent level I and II trauma centers, green columns represent level III trauma centers and orange non-trauma centers. If a single percent is listed above a group of bars, the percent listed represents the average for Indiana. If a number is listed above a group of bars, it represents the count for Indiana. The category 'All Transfers' denotes the patient group where ED Disposition = Transferred to Another Hospital. **The category 'Linked Transfers' represents the patient group for whom the initial hospital and final hospital information could be linked.**

Definitions:
Direct Admit: Patient is admitted directly to the hospital and does not spend time in Emergency Department. The ED Length of Stay should reflect a direct admittance.
External Cause of Injury: ICD-10-CM codes that are used to describe the mechanism or external factor that caused the injury event.
Trauma Type: The classification of the force applied to the body. Trauma type categories include blunt, penetrating, thermal, and other trauma.
Injury Severity Score: An anatomical scoring system defined as the sum of the three highest squared maximum Abbreviated Injury Scale (AIS) values to account for multiple injuries in the six body regions.

Formulas:

Acronyms:
ED: Emergency Department   MVC: Motor Vehicle Collision

ICU: Intensive Care Unit   OR: Operating Room
ISS: Injury Severity Score   Ps: Probability of Survival
LOS: Length of Stay   Level I, II and III: Verified and In
NTC: Non-trauma Center   Process Trauma Centers
CAHs: Critical Access Hospital

Calculations:
$Ps = 1/(1+e^{-b})$ where $b = b_o + b1(RTS) + b2(ISS) + b3(Age\ Index)$
Total GCS = Verbal GCS + Motor GCS + Eye GCS
$RTS = 0.94*GCS + 0.73*SBP + 0.29*RR$
$ISS = (AIS)^2 + (AIS)^2 + (AIS)^2$

Indiana State Department of Health
Trauma and Injury Prevention

Indiana Trauma Registry
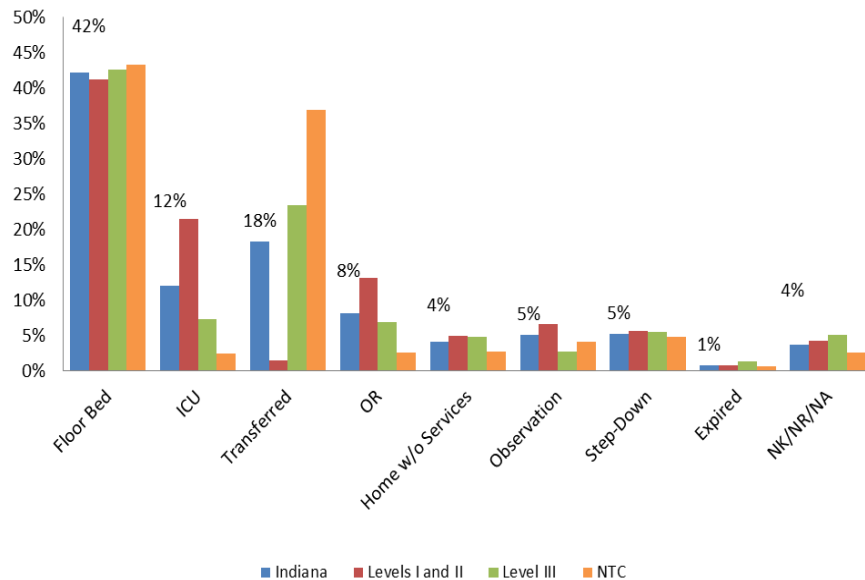
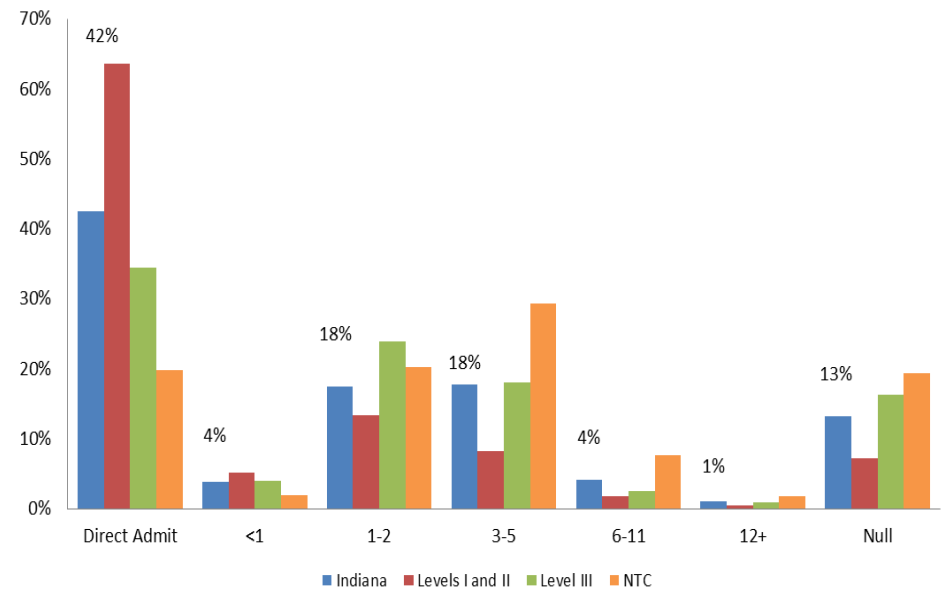## Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED Disposition by Percentage

ED Length of Stay (Hours)

2

Indiana Trauma Registry

Statewide Quarter 2 Data Report
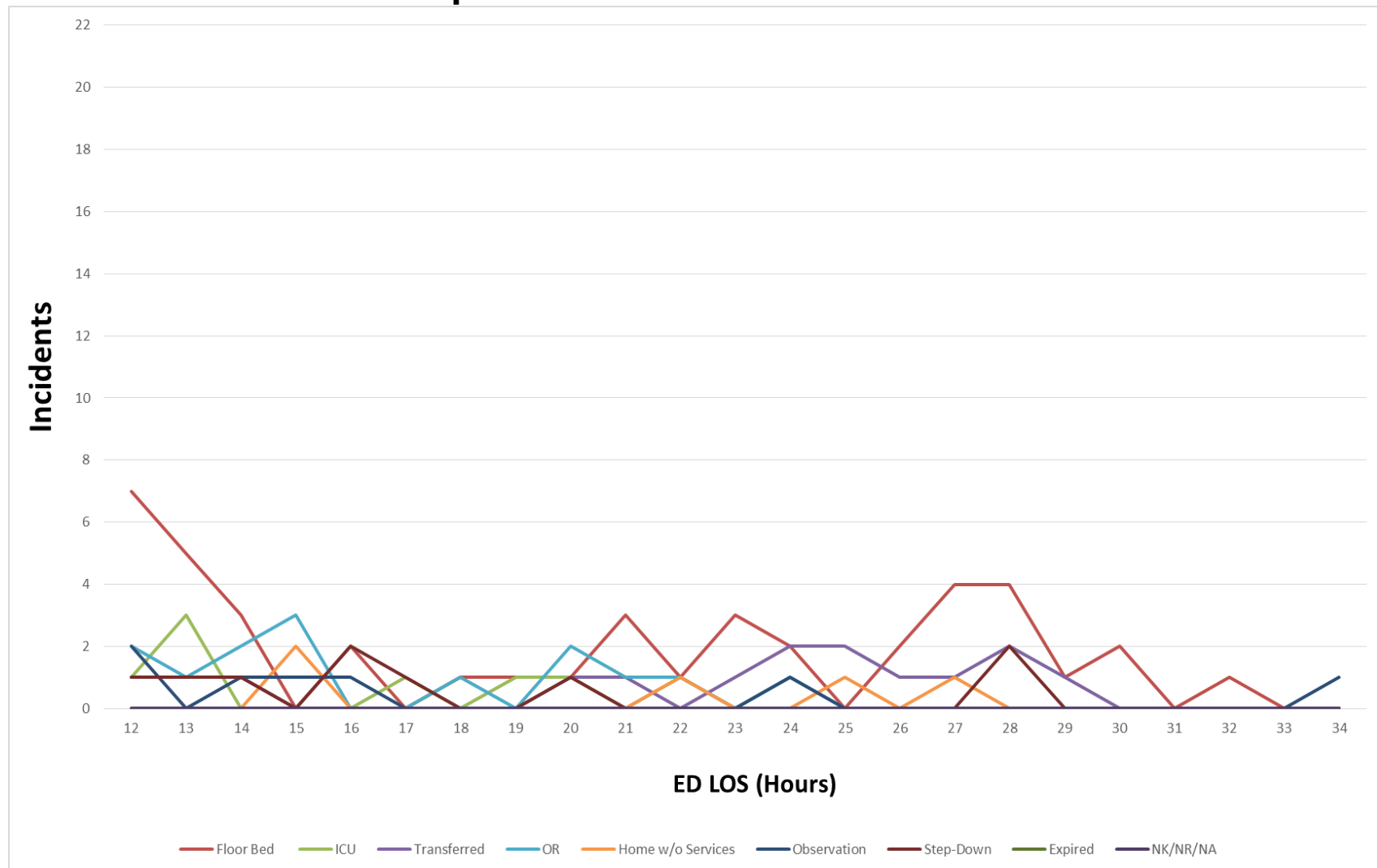April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED Disposition for ED LOS >12 Hours

N=98   *No cases expired

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED LOS > 12 Hours, N=98

Facilities	22 Level I and II 13 Level III 63 Non-trauma Centers	**Region**	31 North; 33 Central; 30 South; 4 Unknown
Average Distance from Scene to Facility	21.2 Miles	**ISS**	55 (1-8 cat); 22 (9-15 cat); 6 (16-24); 3 (25-44); 12 (No ISS)
Transport Type	63 Ambulance; 3 helicopter; 29 Private Vehicle; 3 Unknown	**GCS Motor**	1 (1 cat); 1 (4 cat); 4 (5 cat); 64 (6 cat); 28 (unknown)
Cause of Injury	28 Transport; 57 Falls; 3 Inanimate Mech. Forces; 1 Heat; 9 Unknown	**RTS—Systolic**	4 (3-4)
Signs of Life	95 Yes; 1 No; 2 Unknown	**RTS—Resp. Scale**	3 (3-4)
Age	54.3 Years (2-95 Years)	**Resp. Assistance**	1 Yes; 45 No; 52 Unknown
Gender	44 Female; 54 Male	**ED LOS**	19.8 (12-34)
Interfacility Transfer	11 Yes; 87 No	**ED Disposition**	41 Floor; 5 Home without services; 8 ICU; 6 Observation; 14 OR; 9 Stepdown; 15 Transferred

-Region was created from injury zip code. Missing = no injury zip or injury zip from out of state.
-Numbers represent counts per category or mean with minimum and maximum in parentheses.
-No signs of life is defined as having none of the following: organized EKG activity, papillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress (2015 Trauma Registry Data Dictionary, page 185).

Indiana Trauma Registry

Statewide Quarter 2 Data Report
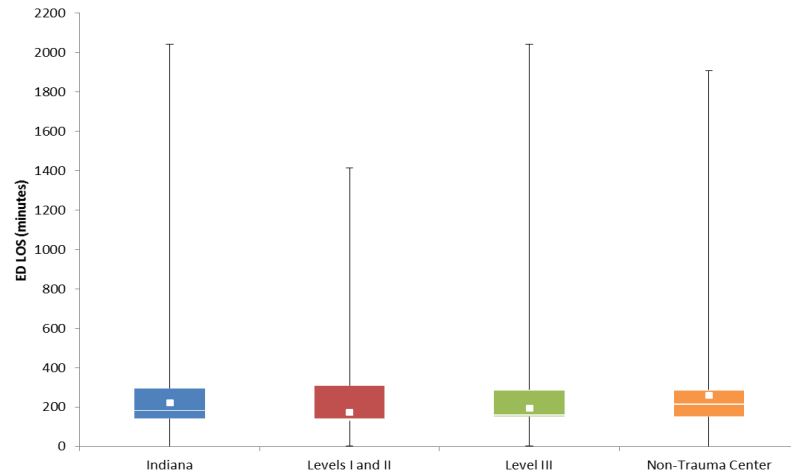April 1, 2016—June 30, 2016
9,188 Incidents

ED LOS (Minutes) - All Patients
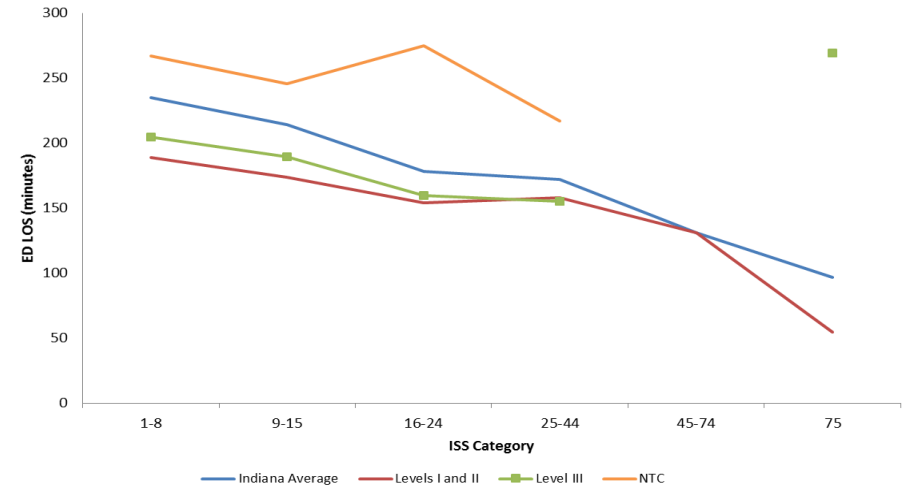
A table with all the values for ED LOS is found on page 50.

ED LOS (Minutes) by ISS

Note for EDLOS by ISS, there were 5 cases with ISS of 75; none were at a non-trauma center.

ED LOS (Minutes) by ISS
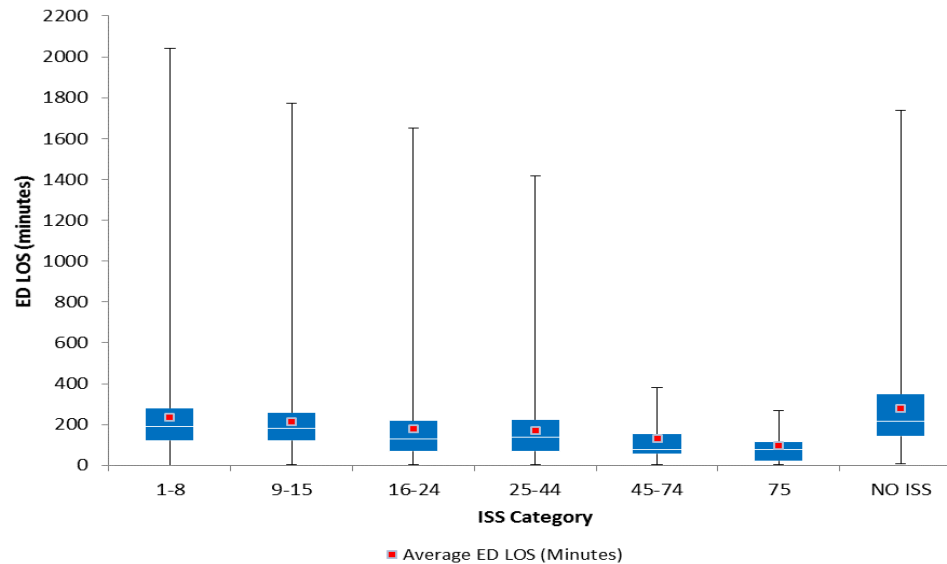
A table with values for ED LOS by ISS may be found on page 51

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

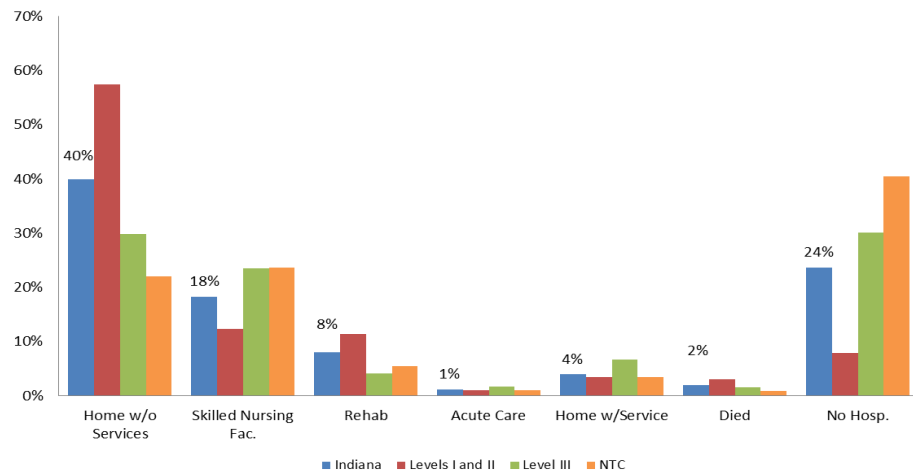|		
Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Hospital Disposition

Hospital dispositions with <1% included: Another institution, Null, Psychiatric Hospital, Long Term Care Hospital and Intermediate Care

Hospital Length of Stay (days)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting
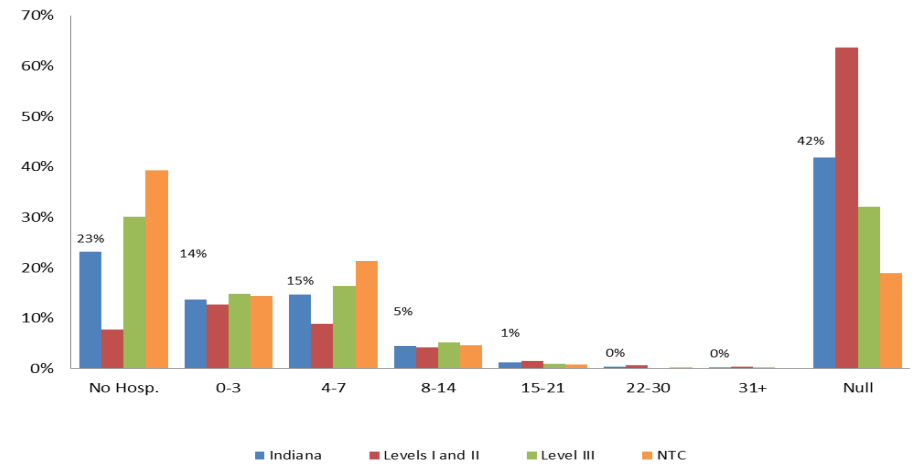
Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

For Quarter 2 2016, of the 9,188 incidents reported to the Indiana Trauma Registry, 1,676 cases that had an ED Disposition of "Transferred to another acute care facility" at the initial facility or that had the Inter-Facility Transfer equal to "Yes" at the Trauma Center. Of those transferred, 787 cases were probabilistically matched. The linked cases make up 23% of the Q2 2016 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.

Initial Facility: 1,676 Incidents

Matched: 787 Incidents

Final Facility: 1,771 Incidents
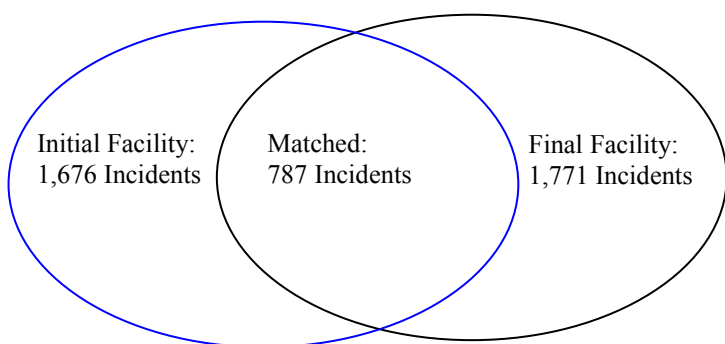
The initial facility in which transfers come from may be considered Critical Access Hospitals (CAHs). All Indiana CAHs are considered Rural, and must meet additional requirements to have a CAH designation, such as having no more than 25 inpatient beds and being located in a rural area. Facilities that are highlighted indicate that these facilities reported data for Quarter 2 2016

Within this transfer data section, the purple columns represent the transfer cases and the single percentages represent the percent for the transfer cases. For two demographic variables, patient age groupings and gender, the Indiana average is included to provide more insight to this transfer population.

Indiana Critical Access Hospitals (CAHs)

Adams Memorial Hospital	Perry County Memorial Hospital
Cameron Memorial Community Hospital Inc	Pulaski Memorial Hospital
Community Hospital of Bremen Inc	Putnam County Hospital
Decatur County Memorial Hospital	Rush Memorial Hospital
Dukes Memorial Hospital	Scott Memorial Hospital
Gibson General Hospital	St. Mary's Warrick Hospital
Greene County General Hospital	St. Vincent – Clay Hospital
Harrison County Hospital	St. Vincent – Dunn Hospital
IU Health Bedford Hospital	St. Vincent – Frankfort Hospital
IU Health Blackford Hospital	St. Vincent – Jennings Hospital
IU Health Paoli Hospital	St. Vincent – Mercy Hospital
IU Health Tipton Hospital	St. Vincent – Randolph Hospital
IU Health White Memorial Hospital	St. Vincent - Salem Hospital
Jasper County Hospital	St. Vincent – Williamsport Hospital
Jay County Hospital	Sullivan County Community Hospital
Margaret Mary Community Hospital Inc	Union Hospital Clinton
Parkview LaGrange Hospital	Woodlawn Hospital
Parkview Wabash Hospital	

Rural Hospitals

Columbus Regional Hospital	Kosciusko Community Hospital
Daviess Community Hospital	Major Hospital
Fayette Regional Health System	Marion General Hospital
Franciscan Health-Michigan City	Memorial Hospital (Logansport)
Franciscan Health-Crawfordsville	Memorial Hospital & Health Care Center (Jasper)
Good Samaritan Hospital	Parkview Noble Hospital
Henry Community Health	Reid Health
IU Health – LaPorte Hospital	St. Joseph's Regional Medical Center – Plymouth
IU Health – Starke Hospital	Schneck Medical Center
King's Daughters' Health	

Indiana Trauma Registry
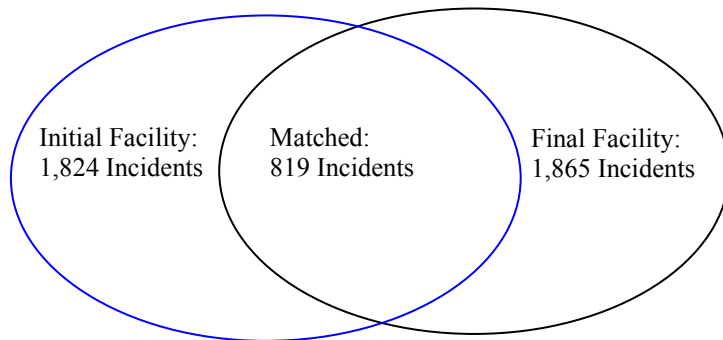
Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Historical Links

Initial Facility: 1,824 Incidents — Matched: 819 Incidents — Final Facility: 1,865 Incidents
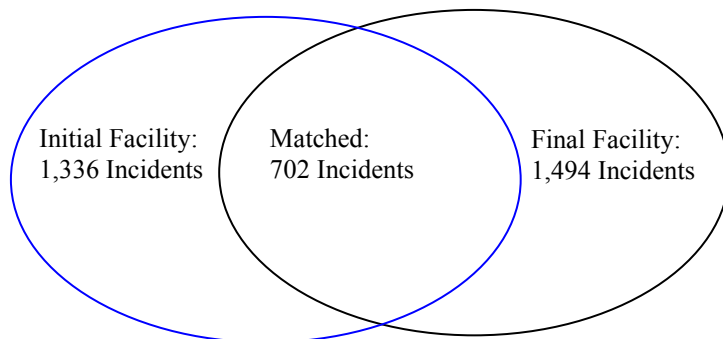
For Quarter 3, 2015, of the 9,555 incidents reported to the Indiana Trauma Registry, 1,824 cases that had an ED Disposition of "Transferred to another acute care facility" at the initial facility or that had the Inter-Facility Transfer equal to "Yes" at the Trauma Center. Of those transferred, 819 cases were probabilistically matched. The linked cases make up 22% of the Q3 2015 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.

Initial Facility: 1,425 Incidents — Matched: 767 Incidents — Final Facility: 1,699 Incidents
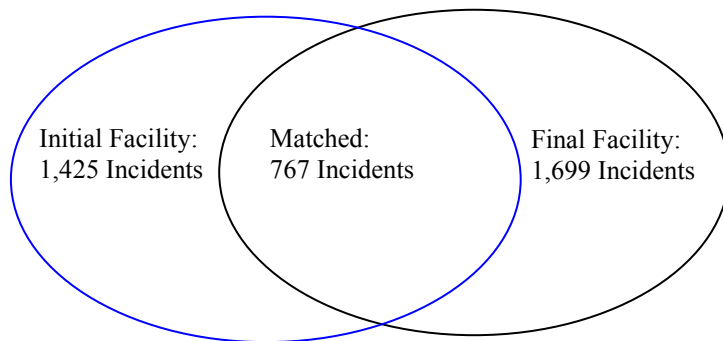
For Quarter 4, 2015, of the 8,728 incidents reported to the Indiana Trauma Registry, 1,425 cases that had an ED Disposition of "Transferred to another acute care facility" at the initial facility or that had the Inter-Facility Transfer equal to "Yes" at the Trauma Center. Of those transferred, 767 cases were probabilistically matched. The linked cases make up 25% of the Q4 2015 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.

Initial Facility: 1,336 Incidents — Matched: 702 Incidents — Final Facility: 1,494 Incidents

For Quarter 1, 2016, of the 8,077 incidents reported to the Indiana Trauma Registry, 1,336 cases that had an ED Disposition of "Transferred to another acute care facility" at the initial facility or that had the Inter-Facility Transfer equal to "Yes" at the Trauma Center. Of those transferred, 702 cases were probabilistically matched. The linked cases make up 25% of the Q1 2016 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.

Indiana Trauma Registry

Statewide Quarter 2 Data Report
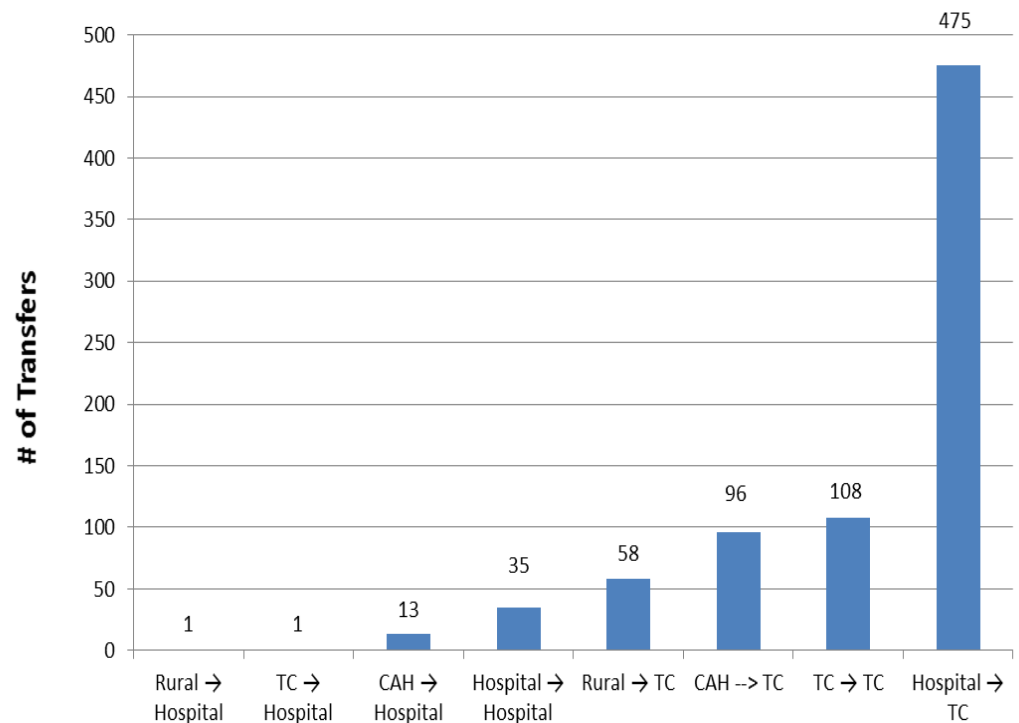**April 1, 2016—June 30, 2016**
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Facility to Facility Transfers

For Transfer Patients:		
Initial Hospital Type	**Final Hospital Type**	**Incident Count**
Rural Hospital	Hospital	1
Trauma Center	Hospital	1
Critical Access Hospital	Hospital	13
Hospital	Hospital	35
Rural Hospital	Trauma Center	58
Critical Access Hospital	Trauma Center	96
Trauma Center	Trauma Center	108
Hospital	Trauma Center	475

Facility Transfer Type

Rural = Rural Hospital; TC = ACS Verified or In Process Trauma Center;

CAH = Critical Access Hospital; Hospital = does not fall into above categories

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

For Linked Transfer Patients:

For Transfer Patients:				
	All Transfer Patients	Critical*	Physiological Critical**	ISS Critical***
Number of Patients	787	253	218	57
EMS Notified to Scene	11.4 minutes	7.1 minutes	6.7 minutes	8.8 minutes
EMS Scene Arrival to Departure	16 minutes	14 minutes	13.2 minutes	15.6 minutes
EMS Scene Departure to Initial Hospital ED Arrival	16.5 minutes	14.3 minutes	13.1 minutes	18 minutes
Initial Hospital ED Arrival to Departure	3 hours 4.3 minutes	3 hours 7.9 minutes	3 hours 12.7 minutes	2 hours 15.8 minutes
Initial Hospital ED Departure to Final Hospital ED Arrival	1 hour 2.3 minutes	1 hour 2.4 minutes	1 hour 1.4 minutes	1 hour 9.5 minutes
TOTAL TIME	4 hours 50.5 minutes	4 hours 25.7 minutes	4 hours 27.1 minutes	4 hours 7.7 minutes

*Critical patient is defined as having a GCS ≤ 12, OR Shock Index > 0.9 OR ISS >15 at the initial hospital.

**Physiological Critical Transfer patient is defined as having a Shock Index > 0.9 OR GCS ≤ 12 at the initial hospital.

***ISS Critical Transfer patient is defined as having an ISS > 15 at the initial hospital

Indiana Trauma Registry

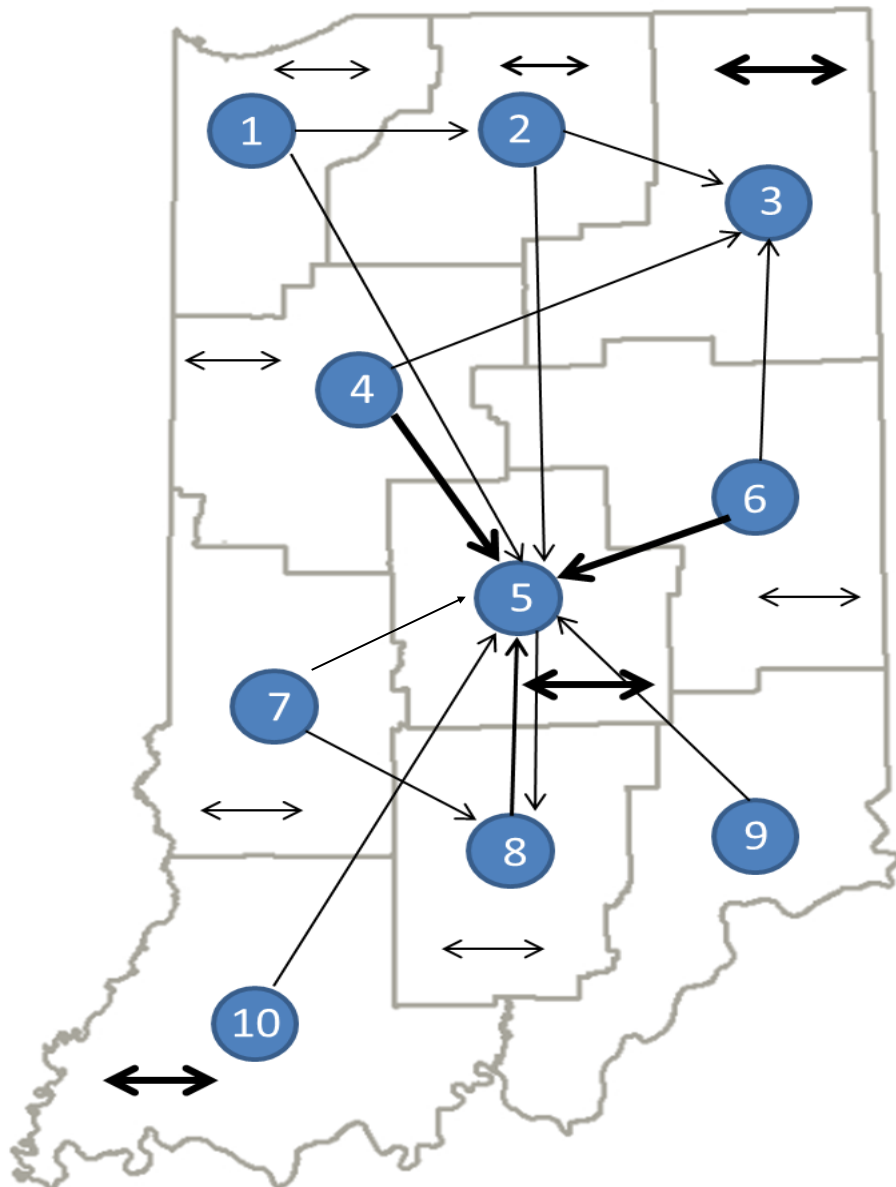## Statewide Quarter 2 Data Report

April 1, 2016—June 30, 2016

9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

*The thickness of the line indicates the frequency of transfers out of or within the public health preparedness district The circles represent transfers from a specific PHPD, not of a specific hospital or county.

For Transfer Patients:		
Public Health Preparedness District Initial Hospital	Public Health Preparedness District Final Hospital	Incident Counts
1	1	13
1	2	14
1	3	1
1	4	4
1	5	9
2	2	12
2	3	3
2	5	2
3	3	115
3	5	1
4	3	5
4	4	11
4	5	50
5	5	164
5	8	3
6	3	5
6	5	128
6	6	10
7	5	57
7	7	15
8	5	43
8	8	5
9	5	2
9	9	2
10	5	12
10	10	101

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

For Transfer Patients:

	All Transfer Patients	*Critical**	*Physiological Critical***	*ISS Critical****
Number of Patients	787	253	218	57
Total Time	4 hours 50.5 minutes	4 hours 25.7 minutes	4 hours 27.1 minutes	4 hours 7.7 minutes
Total Mileage	49.9	53.2	53.3	57.1
Injury Scene to Initial Hospital Mileage**	7.4	6.9	6.8	9
Initial Facility to Final Facility Mileage	42.5	46.3	46.5	48.1

Estimated Average Distance (miles) by Region (region of final hospital):

Region	Injury Scene to Initial Facility Mileage†	Initial Facility to Final Facility Mileage	Total Mileage	Drive Count	Air Count
Indiana Average	7.4	42.5	49.9	686	101
North Region	6.6	29.3	35.9	154	13
Central Region	7.2	48.9	56.0	434	72
South Region	10.2	33.7	43.9	95	16

*Critical patient is defined as having a GCS ≤ 12, OR Shock Index > 0.9 OR ISS >15 at the initial hospital.

**Physiological Critical Transfer patient is defined as having a Shock Index > 0.9 OR GCS ≤ 12 at the initial hospital.

*** ISS Critical Transfer patient is defined as ISS > 15 at the initial hospital.

†Injury Scene to Initial Facility Mileage location estimated by zip code centroid

Statistics for Estimated Average Distance by Region calculated by Public Health Geographics, Epidemiology Resource Center, ISDH

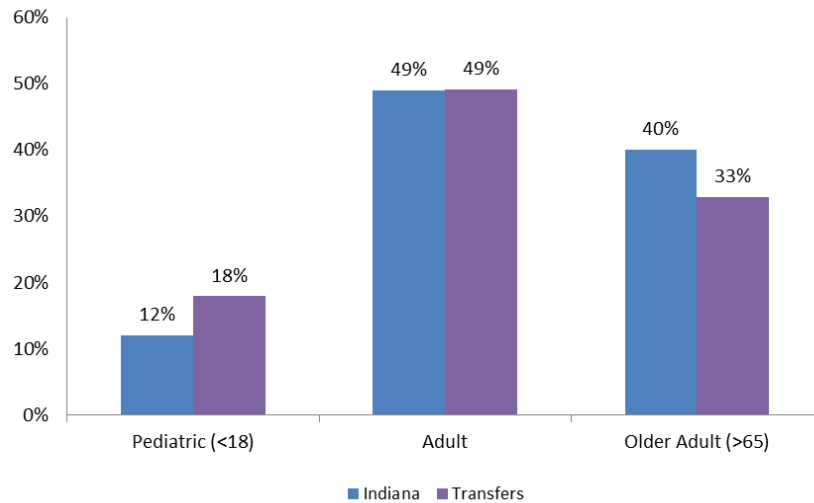# Indiana Trauma Registry

Statewide Quarter 2 Data Report
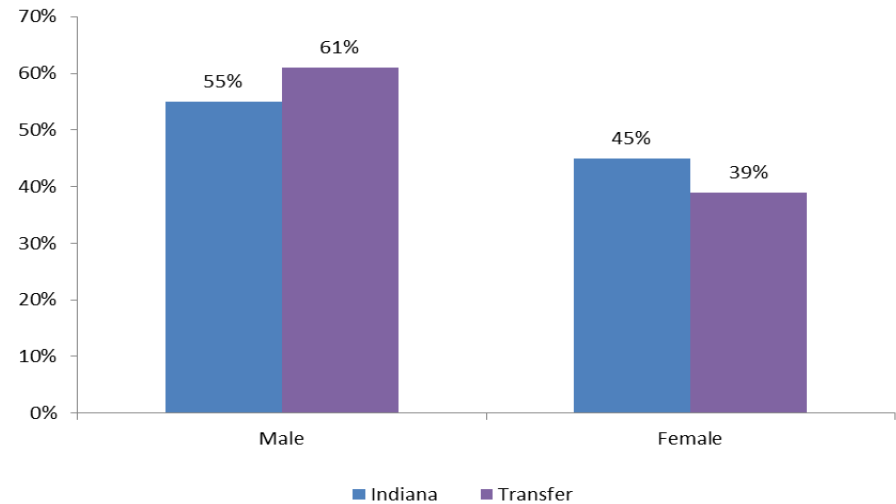**April 1, 2016—June 30, 2016**
9,188 Incidents

98 Total Hospitals Reporting

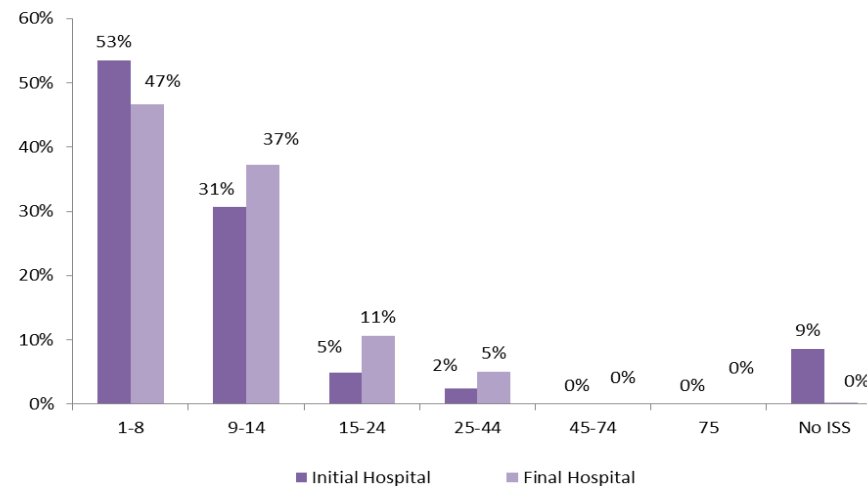|		
Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Patient Age Groupings

Patient Gender

Injury Severity Score (ISS)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
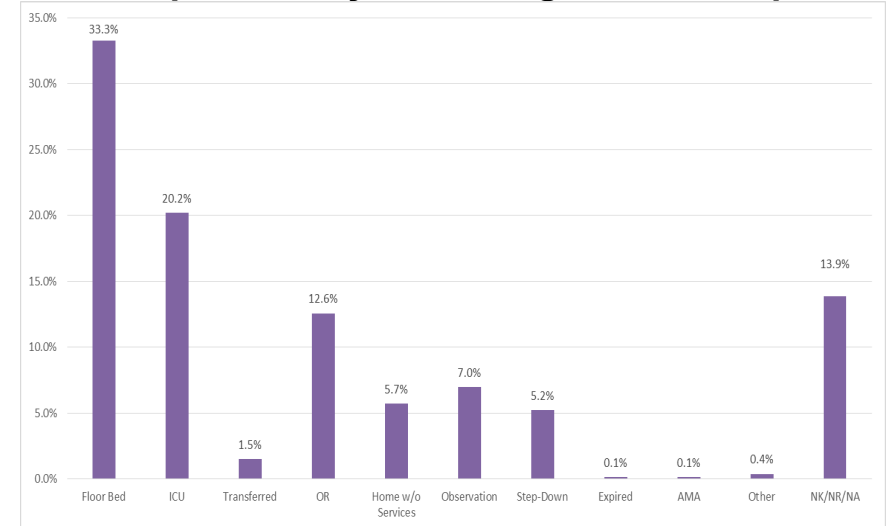9,188 Incidents

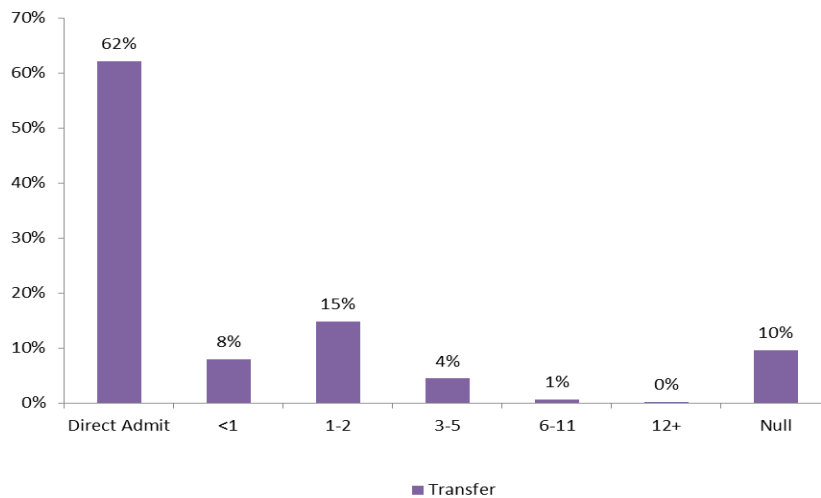### Transport Mode– Final Hospital
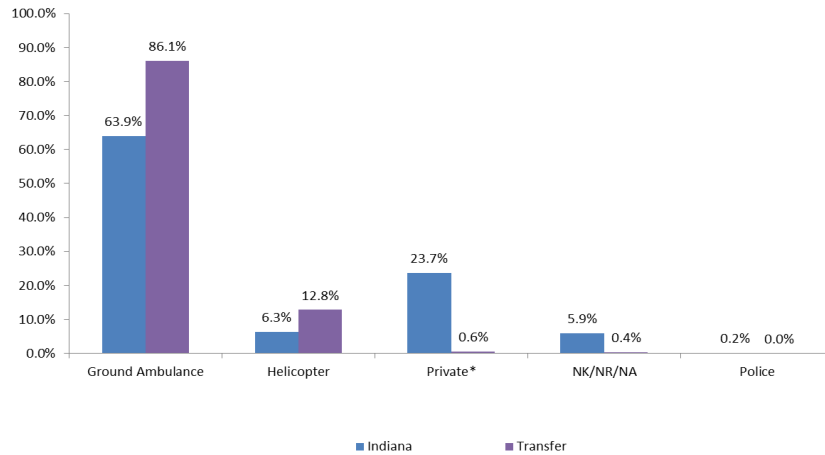
<1% Transport Mode: Police, Other   * Indicates Private/ Public Vehicle, Walk-in
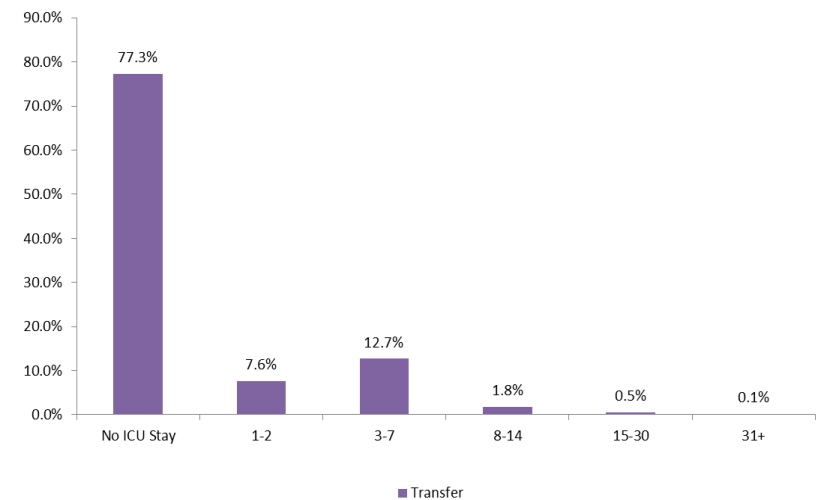
ED Disposition by Percentage- Final Hospital

ED Length of Stay (hours)- Final Hospital

ICU Length of Stay (days)- Final Hospital

14

Indiana Trauma Registry
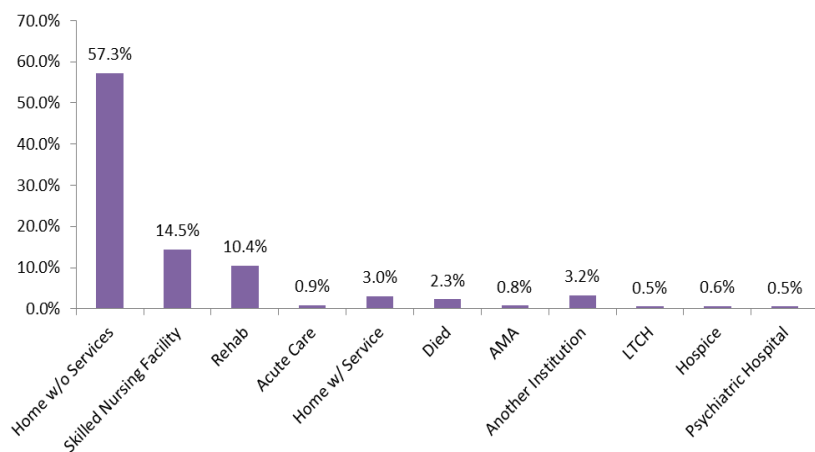
Statewide Quarter 2 Data Report
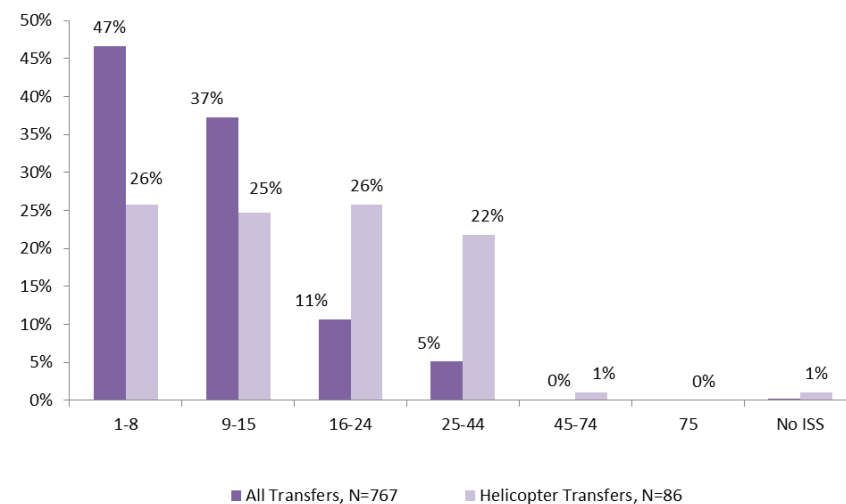April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

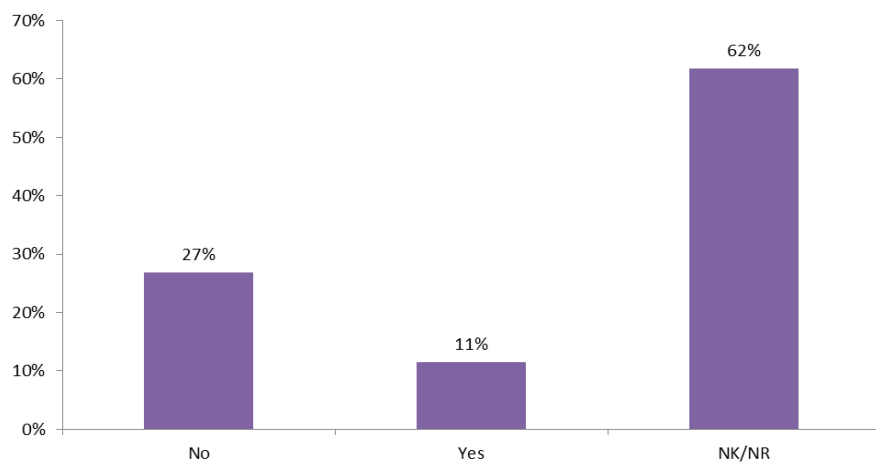|		
Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Discharge Disposition– Final Hospital

Helicopter Transfers by ISS– Final Hospital

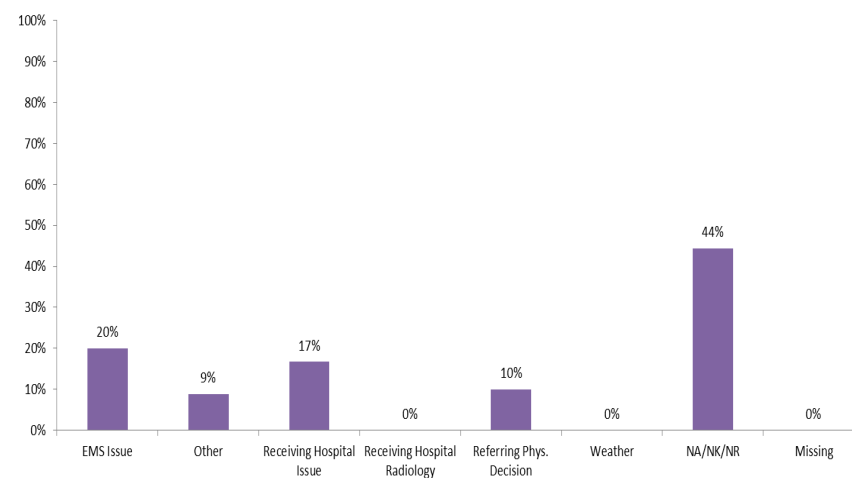All Transfers, N=767   Helicopter Transfers, N=86

Transfer Delay Indicated- Initial Hospital

Initial Facility Transfer Delay Reason

15

Indiana Trauma Registry
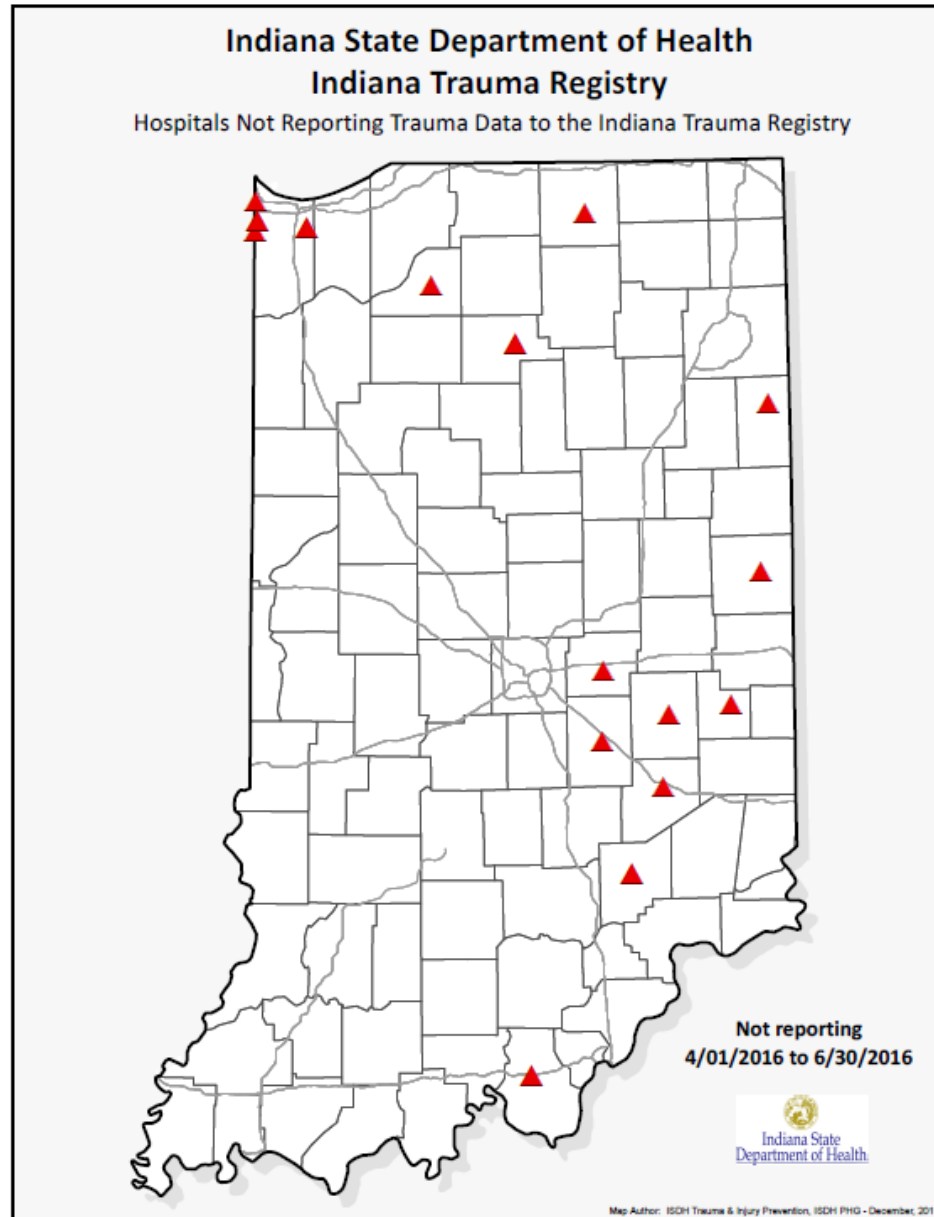
Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

Indiana State Department of Health
Indiana Trauma Registry
Hospitals Not Reporting Trauma Data to the Indiana Trauma Registry

Not reporting
4/01/2016 to 6/30/2016

Map Author: ISDH Trauma & Injury Prevention, ISDH PHG - December, 2016

Hospital that did not report during Q2 2016:

-Adams Memorial Hospital
-Decatur County Memorial
-Fayette Regional Health
-Franciscan Health Dyer
-Franciscan Health Hammond
-Franciscan Health Munster
-Hancock Regional
-Harrison County
-IU Health—Goshen
-IU Health—Starke
-Major Hospital
-Rush Memorial
-St. Mary Medical Center—Hobart
-St. Vincent—Jennings

Indiana State Department of Health
Indiana Trauma Registry

Hospitals Reporting Trauma Data Quarter 2
April 1, 2016 - June 30, 2016

I II Level I and II Trauma Centers

Deaconess Hospital
Eskenazi Health
IU Health - Methodist Hospital
Lutheran Hospital of Indiana
Memorial Hospital of South Bend
Parkview Regional Medical Center
Riley Hospital for Children at IU Health
St Mary's Medical Center of Evansville
St Vincent Indianapolis Hospital & Health Services
Terre Haute Regional Hospital

III Level III Trauma Centers

Community Hospital of Anderson & Madison Co.
Franciscan St Anthony Health - Crown Point
Franciscan St Elizabeth Health - Lafayette East
Good Samaritan Hospital
IU Health - Arnett Hospital
IU Health - Ball Memorial Hospital
Methodist Hospitals - Northlake Campus
Reid Hospital & Health Care Services
Union Hospital Terre Haute

▲ Non-Trauma Hospitals

83 Non-Trauma Hospitals

Hospital categories include Verified and "In the Process"
Trauma Centers as of March 31, 2016.
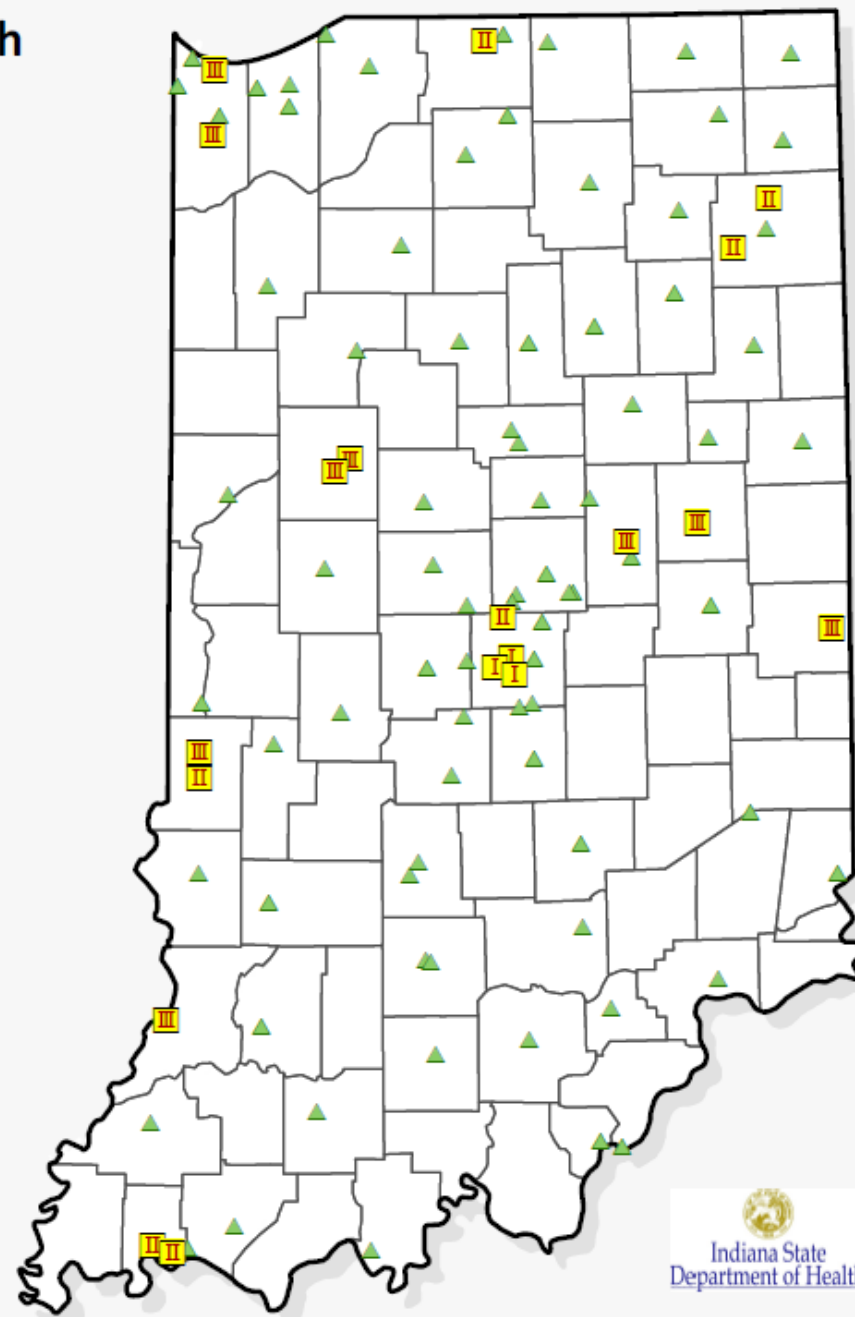
Map Author: ISDH Trauma & Injury Prevention, ISDH PHG - December, 2016

Indiana State
Department of Health

17

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Requests and Changes to the Report from Trauma Care Committee members at the October 2016 ISTCC meeting:

General Report:

-Trauma type and probability of survival will not be included in the statewide report until the CDC finalizes their guidelines on how to categorize those variables.

-Pages 44-49 have caterpillar plots with the ED LOS for critical transfer patients.

-Signs of Life: The two field values for this variable are: 1) Arrived with no signs of life, 2) Arrived with signs of life. A patient with no signs of life is defined as having none of the following: organized EKG activity, pupillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress.

Example Bar and Whisker Plot:

-Bar and whisker plots were requested at the November 2013 ISTCC meeting in order to show more than just an average ED LOS and ED LOS by ISS. The bar and whisker plots represent the four quartiles of data, as illustrated on the example graph to the right. The blue boxes each contain 25% of the values and the error bars each represent where 25% of the values fell. The median is represented in the middle of the two blue boxes with the white line. The red dot in the center indicates the average for that category. The cap on the error bars indicates the minimum and maximum of each category and all the values fall within the two caps.

-For the ED LOS bar and whisker plots to the right, the average is represented by the white dot and the color boxes reflect the hospital type. The ED LOS by ISS plots on the next page follow the same layout and the red dots indicate the average for each of the ISS categories.
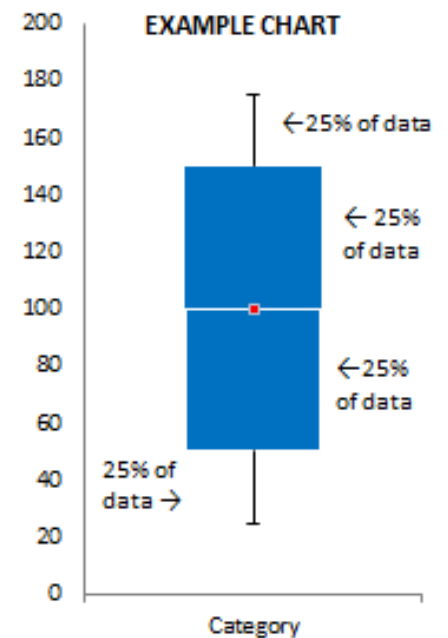
EXAMPLE CHART

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Supplemental Report

The Supplemental Report (pages 19-53) contains demographic information, data that stays nearly constant from quarter to quarter, and reference tables and maps.

Definitions:

Emergency Department Length of Stay (ED LOS): The time from ED Admission to ED Discharge (Physical Exit). This will change to time from ED Admission to ED Discharge (Orders Written) beginning with quarter 3 2016 data (July 1, 2016—September 30, 2016).

Direct Admit: Patient is admitted directly to the hospital and does not spend time in Emergency Department. The ED Length of Stay should reflect a direct admittance.

External Cause of Injury: ICD-10-CM codes that are used to describe the mechanism or external factor that caused the injury event.

Trauma Type: The classification of the force applied to the body. Trauma type categories include blunt, penetrating, thermal, and other trauma.

Injury Severity Score: An anatomical scoring system defined as the sum of the three highest squared maximum Abbreviated Injury Scale (AIS) values to account for multiple injuries in the six body regions.

Signs of Life: The two field values for this variable are: 1) Arrived with no signs of life, 2) Arrived with signs of life. A patient with no signs of life is defined as having none of the following: organized EKG activity, pupillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress.

Acronyms:

E-code: External Cause of Injury	MVC: Motor Vehicle Collision
ED: Emergency Department	OR: Operating Room
ICU: Intensive Care Unit	Ps: Probability of Survival
ISS: Injury Severity Score	CAHs: Critical Access Hospital
LOS: Length of Stay	

Calculations:

$Ps = 1/(1+e^{-b})$ where $b = b_o + b1(RTS) + b2(ISS) + b3(Age\ Index)$

Total GCS = Verbal GCS + Motor GCS + Eye GCS

RTS = 0.94*GCS + 0.73*SBP + 0.29*RR

$ISS = (AIS)^2 + (AIS)^2 + (AIS)^2$

Indiana State Department of Health
Trauma and Injury Prevention

Indiana Trauma Registry
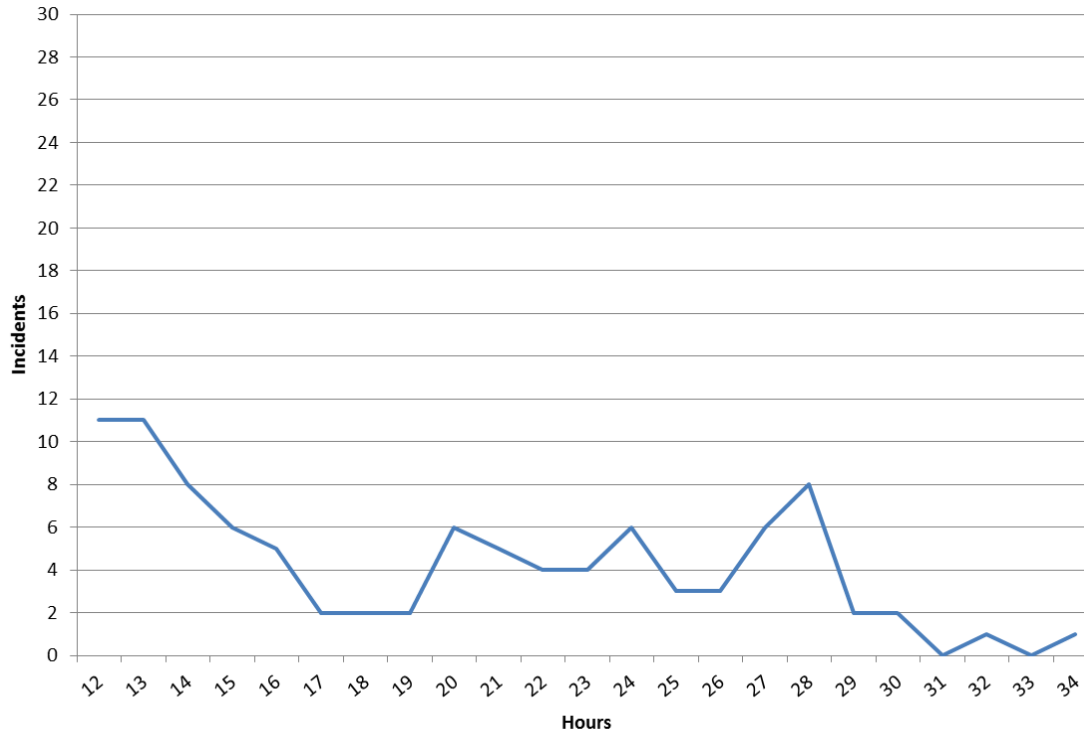
Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED LOS ≥ 12 Hours

N=98

ED Length of Stay ≥ 12 Hours			
Hour	Count	**Hour**	Count
12th	11	**24th**	6
13th	11	**25th**	3
14th	8	**26th**	3
15th	6	**27th**	6
16th	5	**28th**	8
17th	2	**29th**	2
18th	2	**30th**	2
19th	2	**31st**	0
20th	6	**32nd**	1
21st	5	**33rd**	0
22nd	4	**34th**	1
23rd	4		

Indiana Trauma Registry

Statewide Quarter 2 Data Report

April 1, 2016—June 30, 2016

9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Average ED LOS (Minutes)
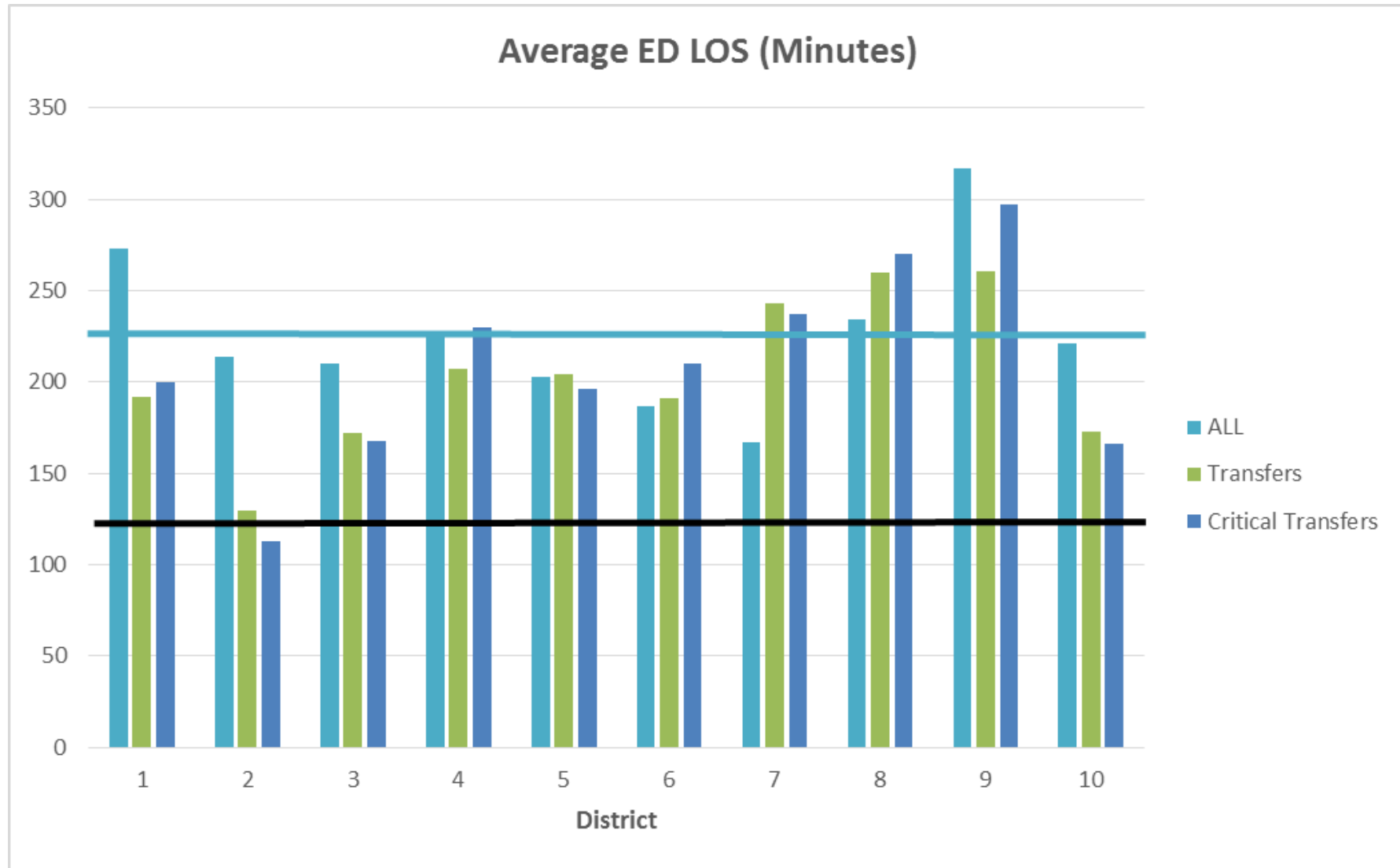
*Black line represents the 120 ACS goal

**Blue line represents the state average

Indiana Trauma Registry

Statewide Quarter 2 Data Report
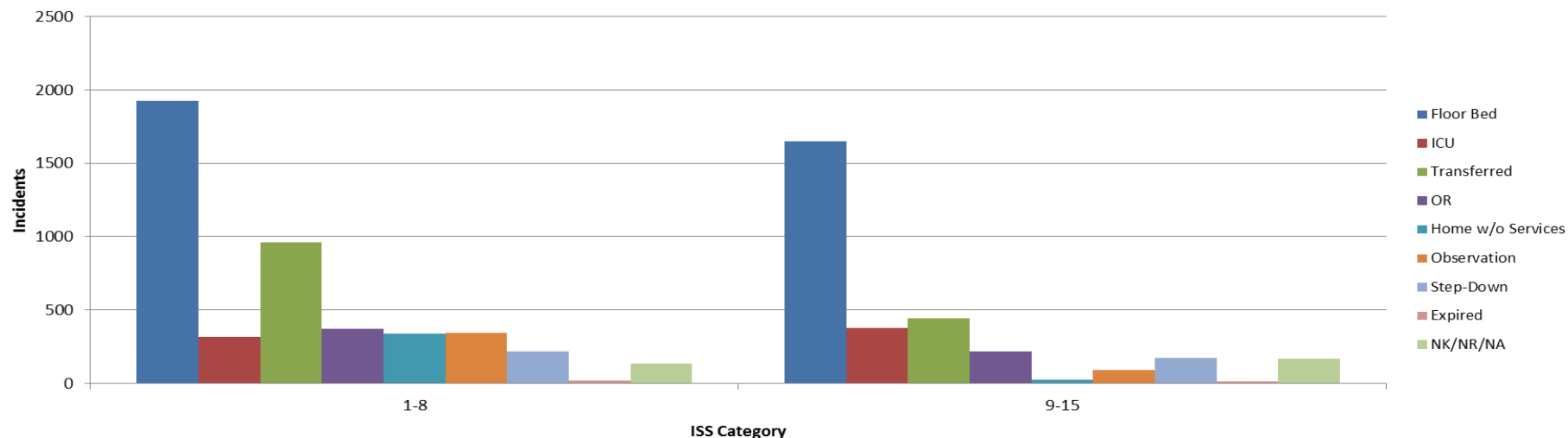April 1, 2016—June 30, 2016
9,188 Incidents

ED Disposition by ISS 1-15

ED Disposition by ISS 16-75
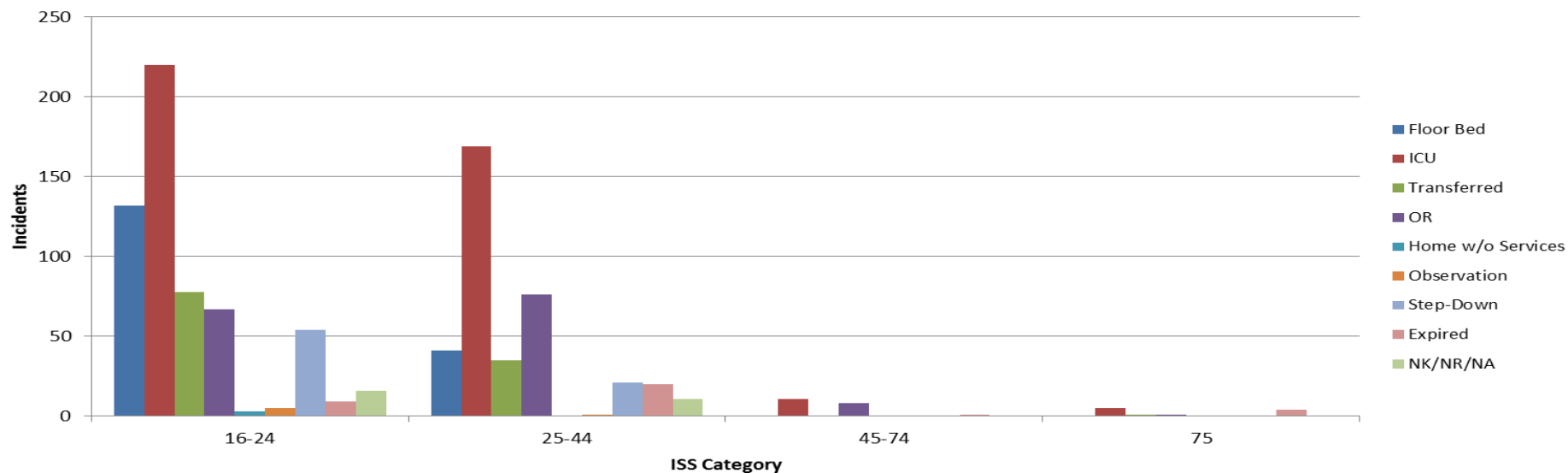
ED Disposition <1%: AMA; Home with services; Other (Jail, Mental Institution, etc.). Please note the difference in axis scale between the top and bottom graphs.
*A table with values for ED Disposition by ISS is found on page 51.

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Primary Payer Mix
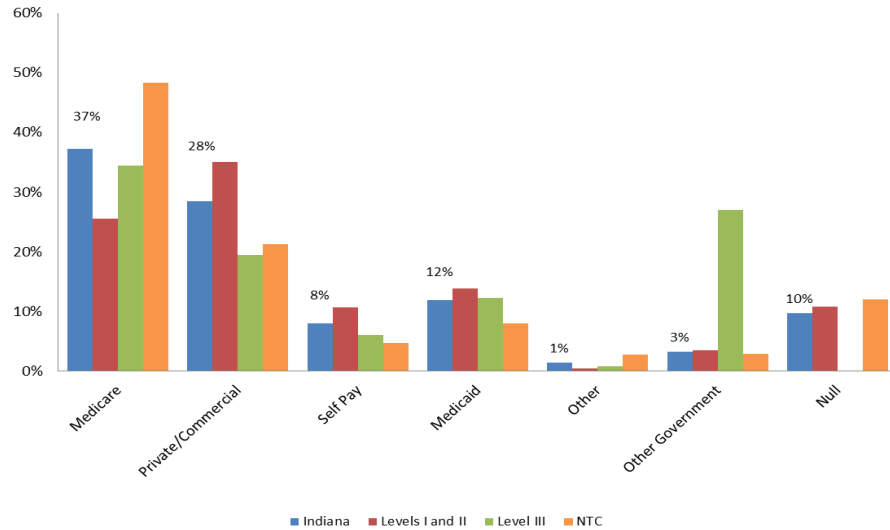
ICU Length of Stay (Days)

Indiana Trauma Registry
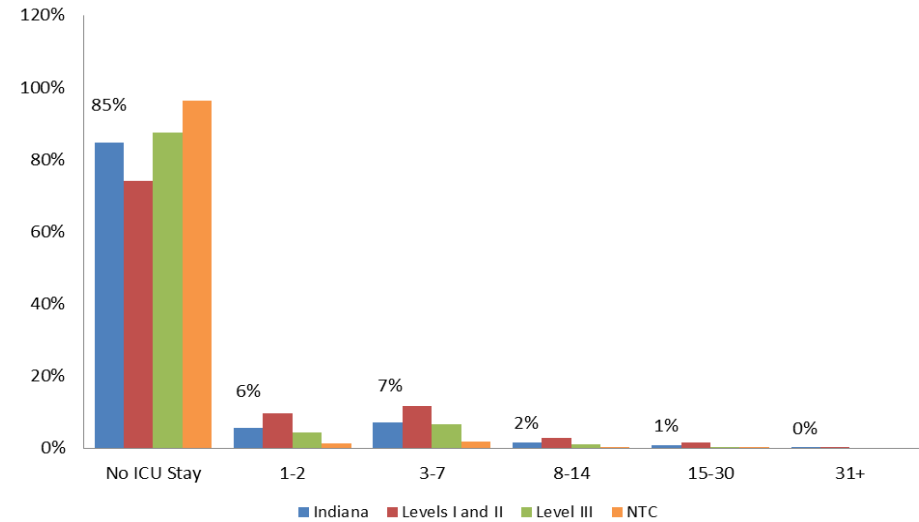
Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Hospital Length of Stay > 15 days, N=178

Primary Payer Mix
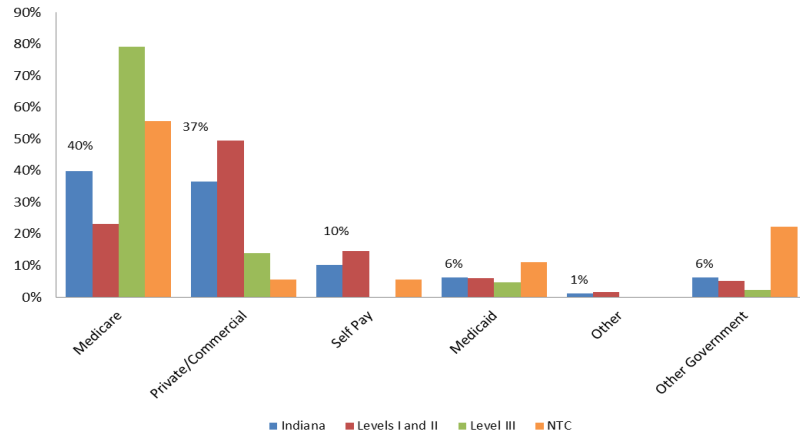
Hospital Disposition
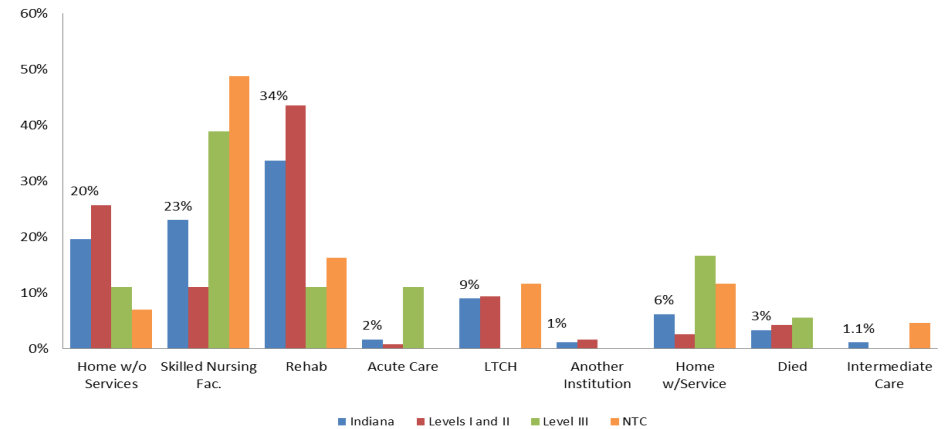
Another Institution includes any other medical facility not defined in the other categories.

Cause of Injury
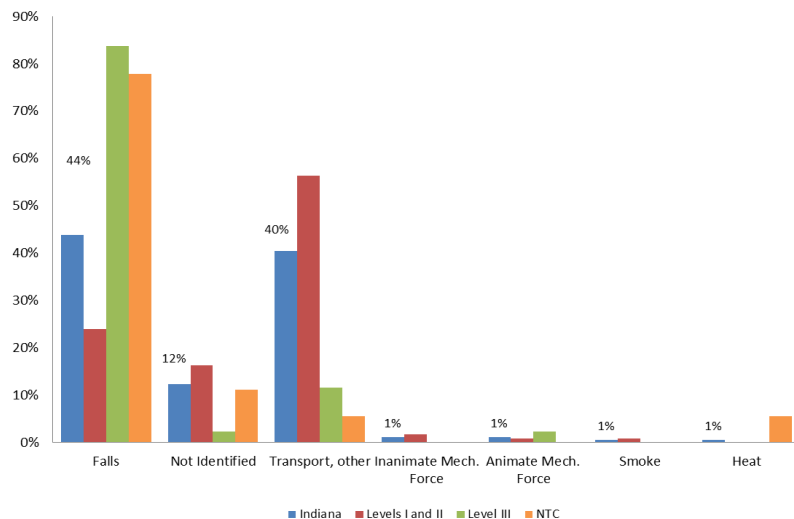
Cause of Injury is based on ICD-10-CM codes as of January 1, 2016. The categories for this variable include:

- Transport
- Falls
- Inanimate Mechanical Forces
- Animate Mechanical Forces
- Drowning
- Breathing
- Electricity/Radiation
- Smoke
- Heat
- Venom
- Forces of Nature

- Overexertion and Travel
- Unspecified
- Poisoning
- Not Identified

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
**9,188 Incidents**

98 Total Hospitals Reporting

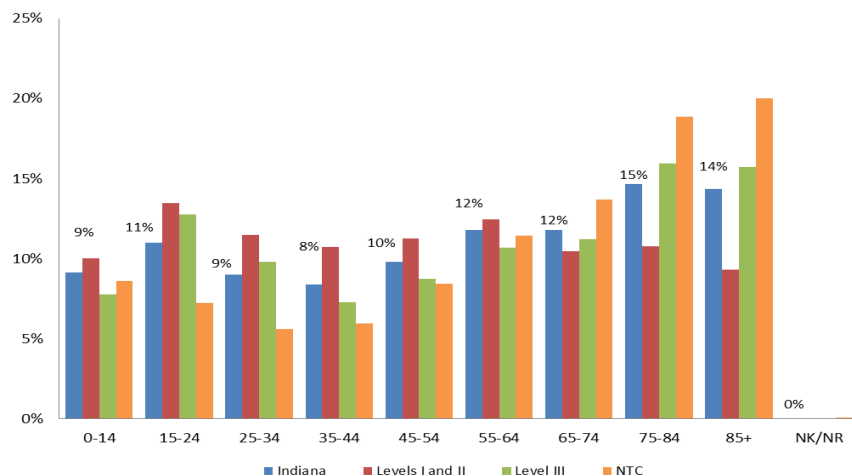|		
Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Patient Age (Years)

There were 3 unknown ages.

Patient Age Groupings
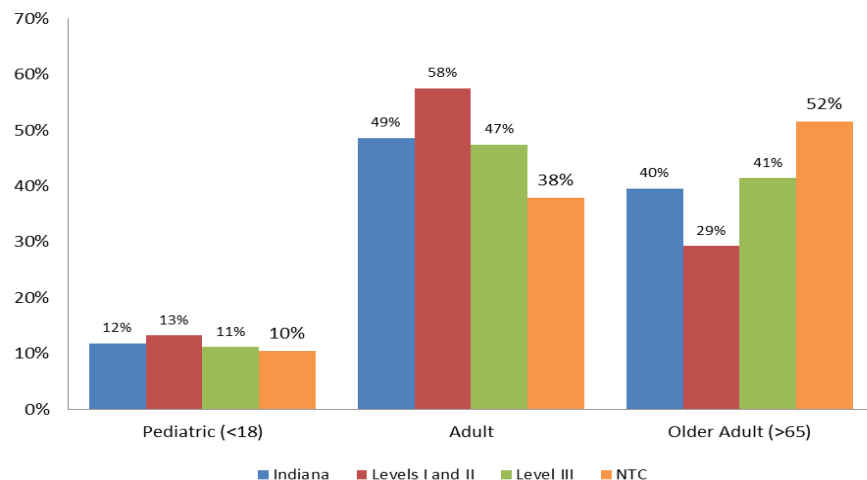
Age Group	Indiana	Level I and II	Level III	NTC
0-14	841	433	105	303
15-24	1009	582	172	255
25-34	826	497	132	197
35-44	773	465	98	210
45-54	901	487	118	296
55-64	1085	538	144	403
65-74	1085	452	151	482
75-84	1346	467	215	664
85+	1319	403	212	704
NK/NR	3	0	0	3
Total	9188	4324	1347	3517

Age Group	Indiana	Level I and II	Level III	NTC
Pediatric (<18)	1089	571	150	368
Adult	4464	2488	639	1334
Older Adult (>65)	3635	1265	558	1812
Total	9188	4324	1347	3514

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
**9,188 Incidents**

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Patient Gender
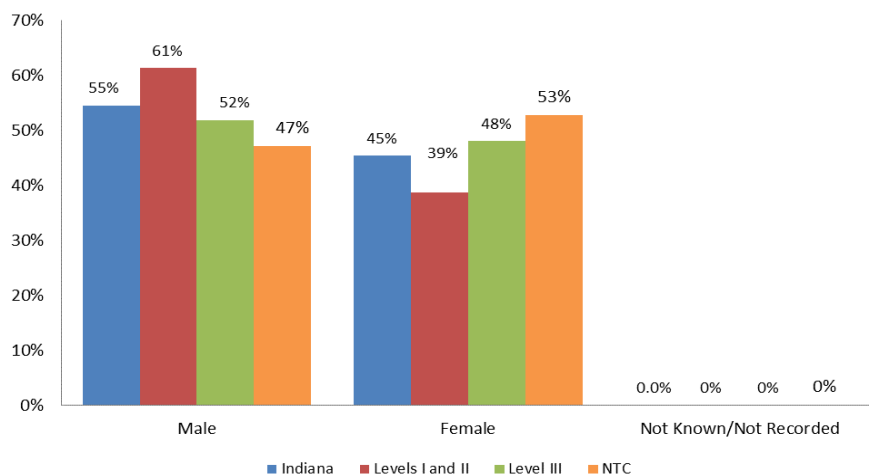
Gender	Indiana	Level I and II	Level III	NTC
Male	5012	2654	699	1659
Female	4174	1670	648	1856
Unknown	2	0	0	2
Total	1988	4324	1347	3517

Patient Race
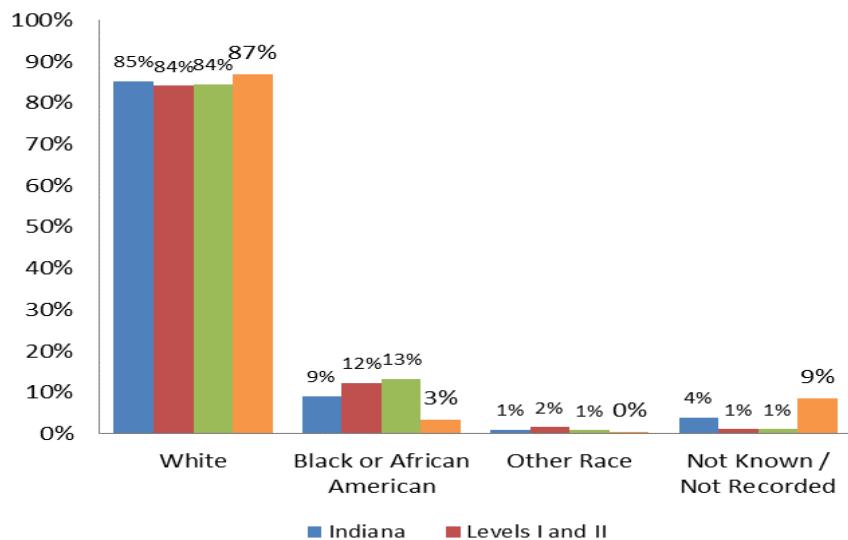
Race	Indiana	Level I and II	Level III	NTC
White	7835	3637	1138	3060
Black or African American	832	533	178	121
Other	96	70	12	14
Not Known/Not Recorded	361	47	15	299
American Indian or Alaska Native	9	4	2	3
Asian	48	28	2	18
Native Hawaiian or Pacific Islander	7	5	0	2
Total	9188	4324	1347	3517

<1% Race - Asian, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
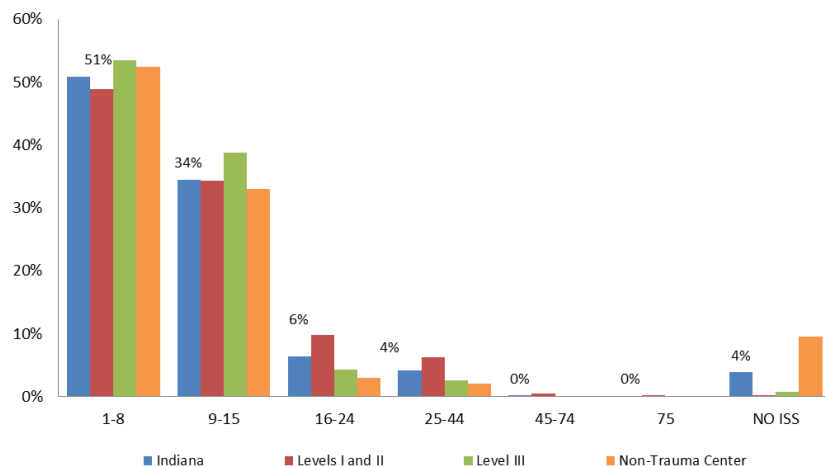9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Injury Severity Score (ISS)

ISS Category	Indiana	Level I and II	Level III	NTC
1-8	4677	2112	721	1844
9-15	3169	1483	523	1163
16-24	584	424	58	102
25-44	375	268	34	73
45-74	20	19	1	0
75	11	9	1	1
No ISS	352	9	9	334
Total	9188	4324	1347	3517

There were 20 and 11 cases in the 45-74 and 75+ categories, respectively

Transport Mode
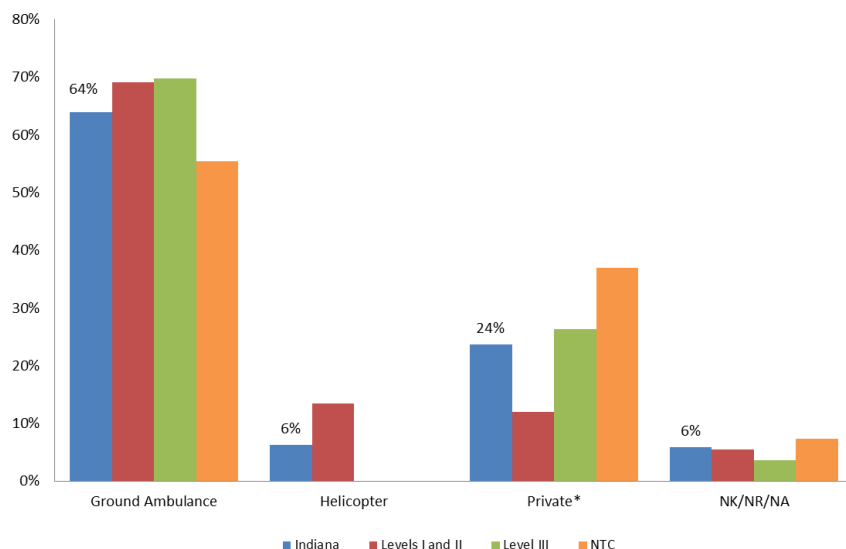
Transport Mode	Indiana	Level I and II	Level III	NTC
Ground Ambulance	5875	2986	940	1949
Helicopter	579	579	0	0
Private	2173	518	355	1300
NK/NR/NA	543	235	49	259
Police	18	6	3	9
Other	0	0	0	0
Total	9188	4324	1347	3517

<1% Transport Mode: Police, Other   * Indicates Private/ Public Vehicle, Walk-in

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

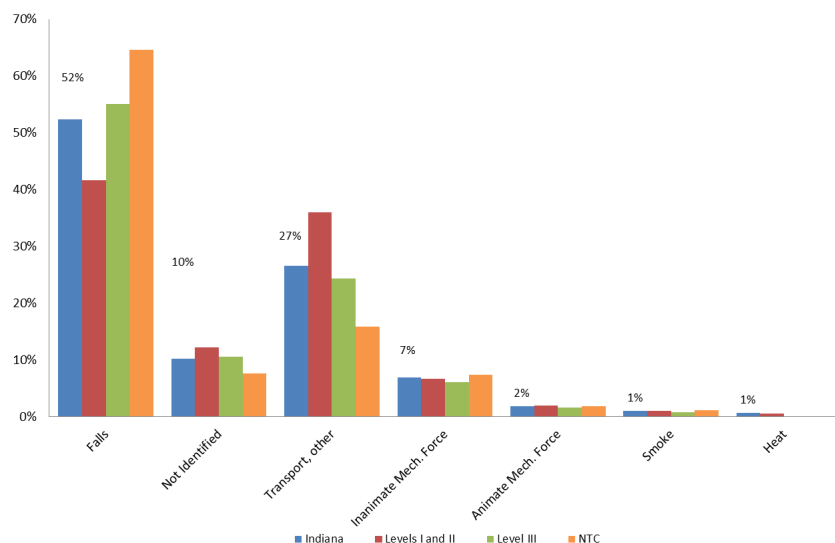|		
Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Cause of Injury

<1% Cause of Injury Categories: Unspecified, Electricity/Radiation, Forces of Nature, Drowning, Breathing, Venom, Noxious Substances, Overexertion and Travel and Poisoning.

Cause of Injury	Indiana	Level I and II	Level III	NTC
Falls	4810	1798	742	2270
Not Identified	936	527	142	267
Transport	2440	1556	328	556
Inanimate Mech. Force	628	288	82	258
Animate Mech. Force	169	82	22	65
Smoke	93	45	10	38
Heat	56	20	11	25
Unspecified	44	2	8	34
Electric/ Radiation	9	4	1	4
Nature	1	1	0	0
Drowning	2	1	1	0
Total	9188	4324	1347	3517

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

All Patients
Average ED LOS (Hours)

	Indiana	Level I and II	Level III	Non-Trauma Centers
Upper CL	3.8	3.2	3.5	4.4
▲ Mean	3.7	3.0	3.3	4.2
Lower CL	3.6	2.8	3.0	4.1
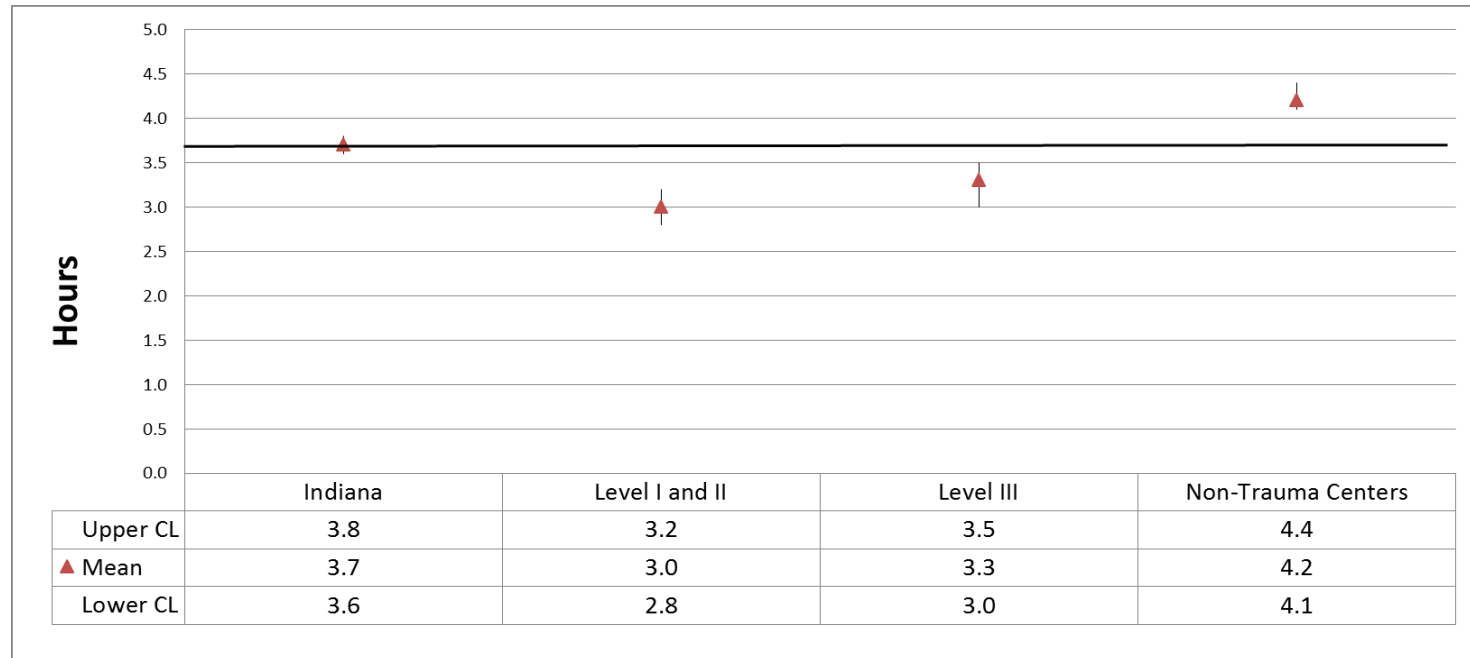
The purpose of the caterpillar graphs is to compare different groups to the average ED LOS. The Indiana mean is the comparison group, which is represented by the black line.

The ED LOS for these graphs was modeled using time-to-event analysis. The purposes of using this analysis were to account for censoring (death) and to see how variables influence ED LOS. The outcome variable was ED LOS and the independent variables were total GCS and age. If total GCS was missing but manual total GCS was recorded, then the manual total GCS was used. These two variables were used because they were the most similar to variables used in the published, peer-reviewed literature on ED LOS. Both were significant in the model. Increasing total GCS and age led to a slightly shorter ED LOS. Hospitals that did not have enough incidents with total GCS or age could not be modeled.

In the chart on the left, note the trauma center average is above the mean and the non-trauma center is below the mean. The mean, 95% confidence limit and lower confidence limit are listed for each group.

In the chart on the right, the data is for the trauma centers. The trauma center average is in the first column on the left side. The information for each trauma center has been assigned a random number for confidentiality. The mean, 95% confidence limit and lower confidence limit are listed for each group.

Indiana Trauma Registry

All Patients
Level I and II Trauma Centers ED LOS (Hours)

	Levels I and II	ID 83	ID 104	ID 66
Upper CL	3.2	3.1	3.2	3.9
▲ Mean	3.0	2.8	3.0	3.4
Lower CL	2.8	2.5	2.8	2.9

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

All Patients
Level III Trauma Centers ED LOS (Hours)

	Level III	ID 105	ID 51	ID 119	ID 107
Upper CL	3.5	2.8	3.8	5.0	4.2
▲ Mean	3.3	2.6	3.4	3.8	3.8
Lower CL	3.0	2.4	3.0	2.5	3.4

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

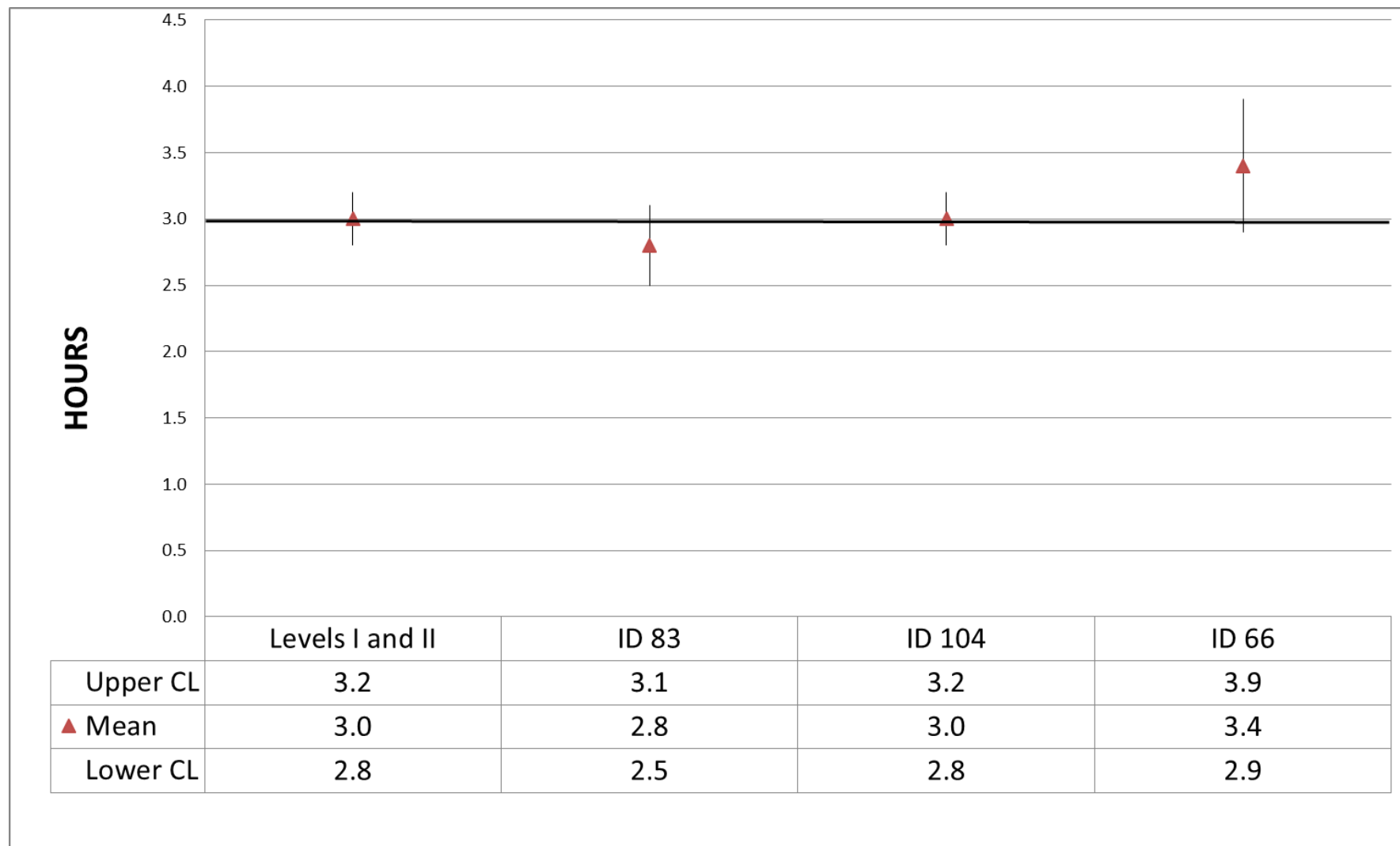|		
Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

All Patients
Non-trauma Centers ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
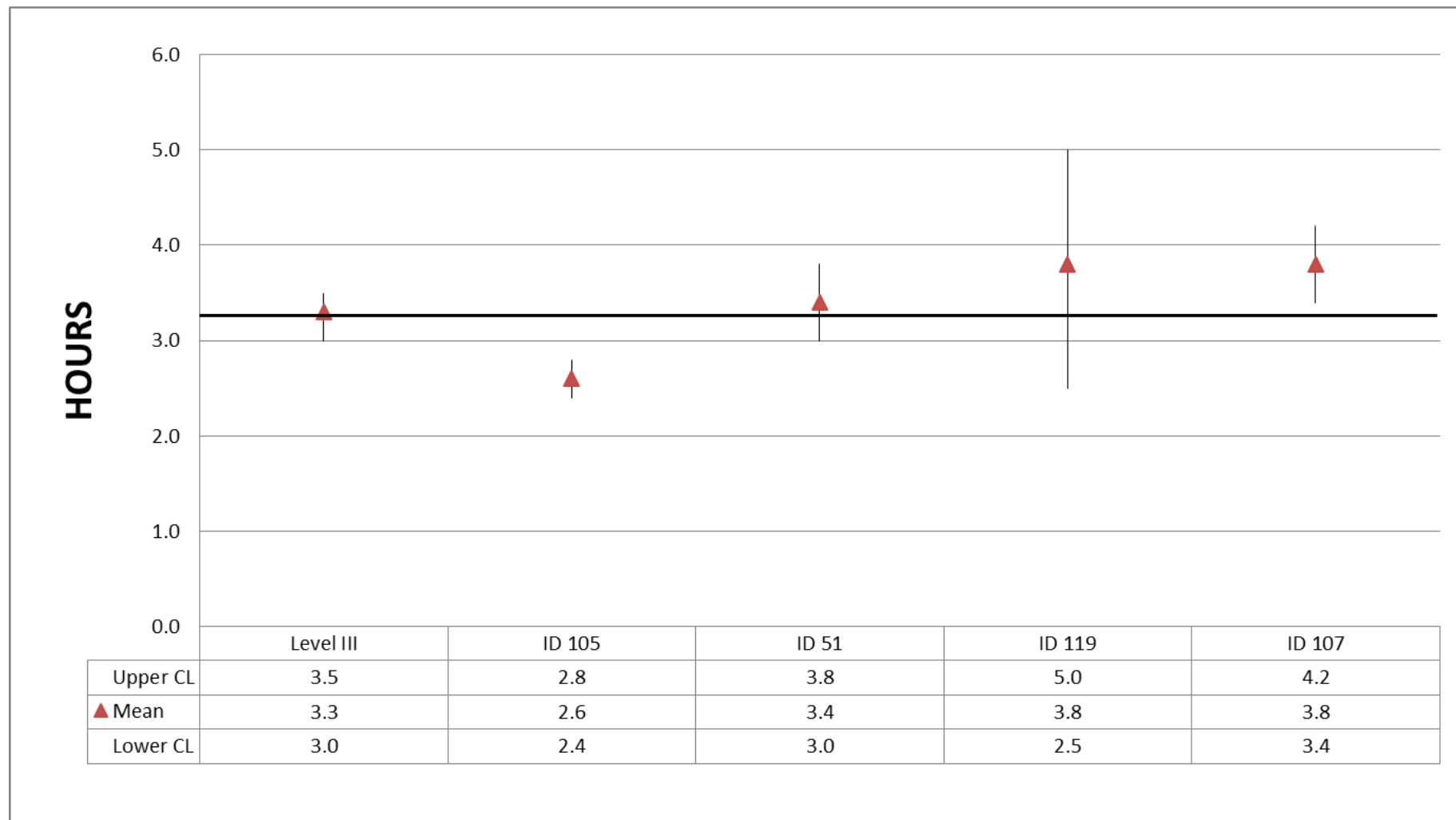April 1, 2016—June 30, 2016
9,188 Incidents

All Patients
Non-Trauma Centers-
Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
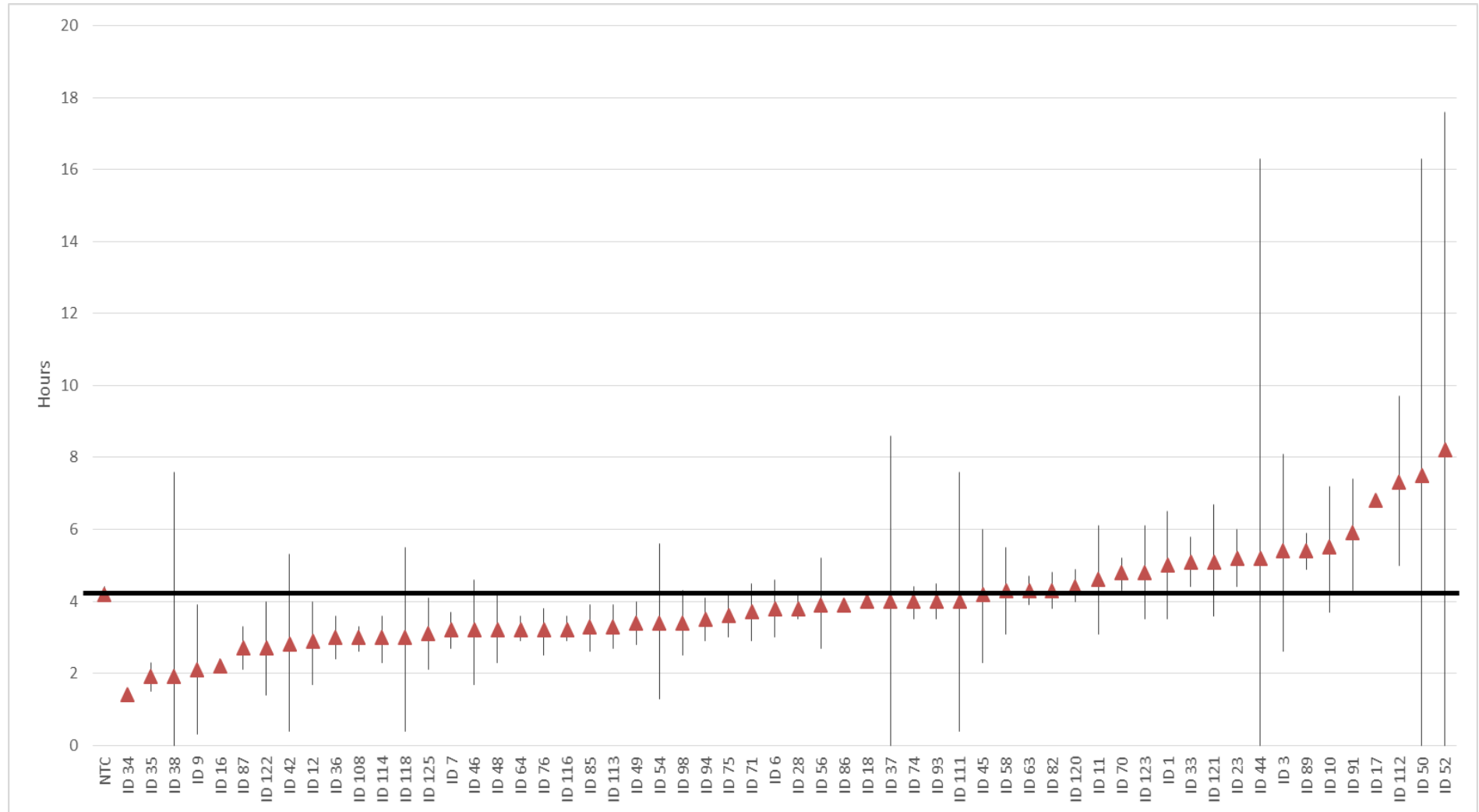**9,188 Incidents**

98 Total Hospitals Reporting
Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

All Patients
Non-Trauma Centers-
Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

All Patients
Non-Trauma Centers-
Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
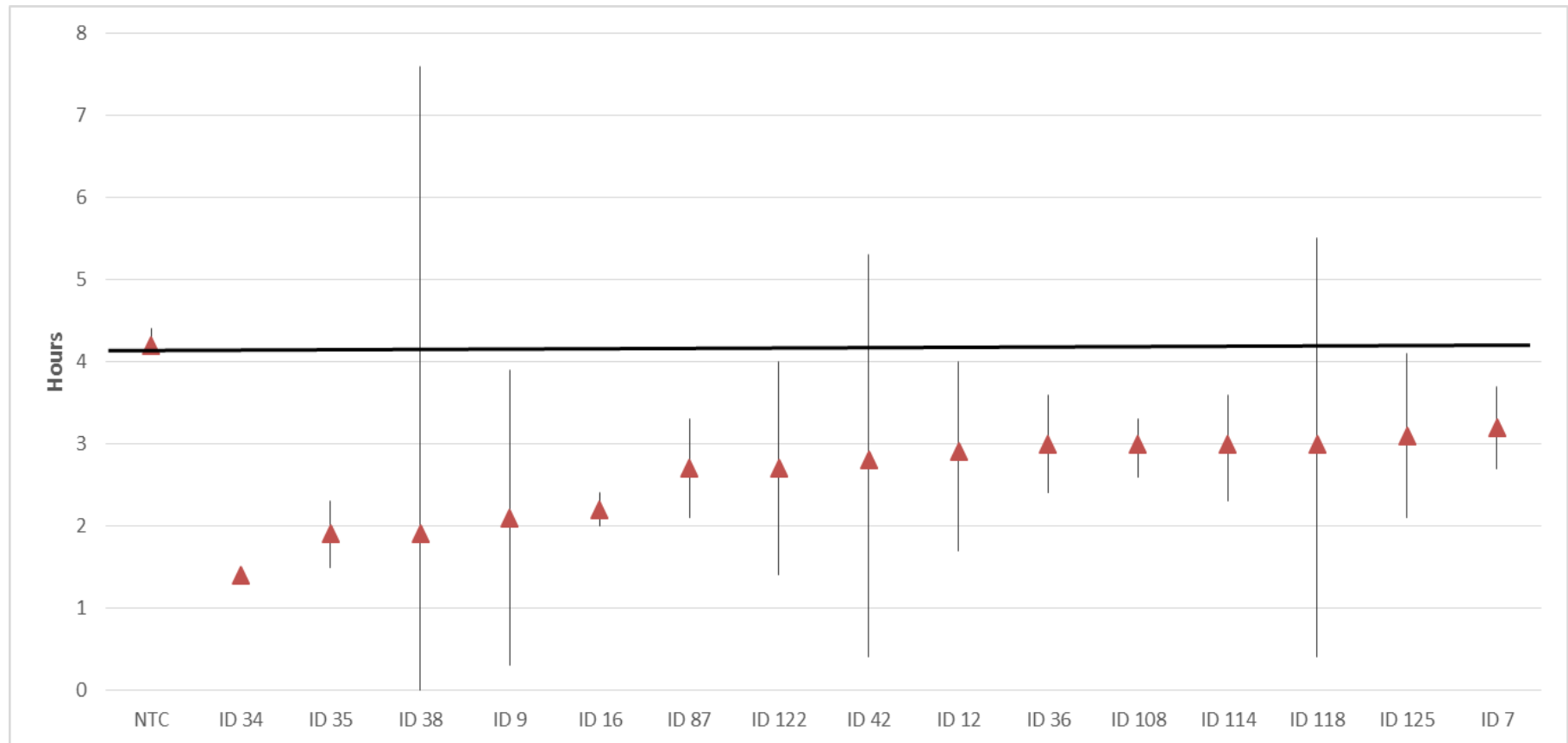**April 1, 2016—June 30, 2016**
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

All Patients
Non-Trauma Centers-
Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
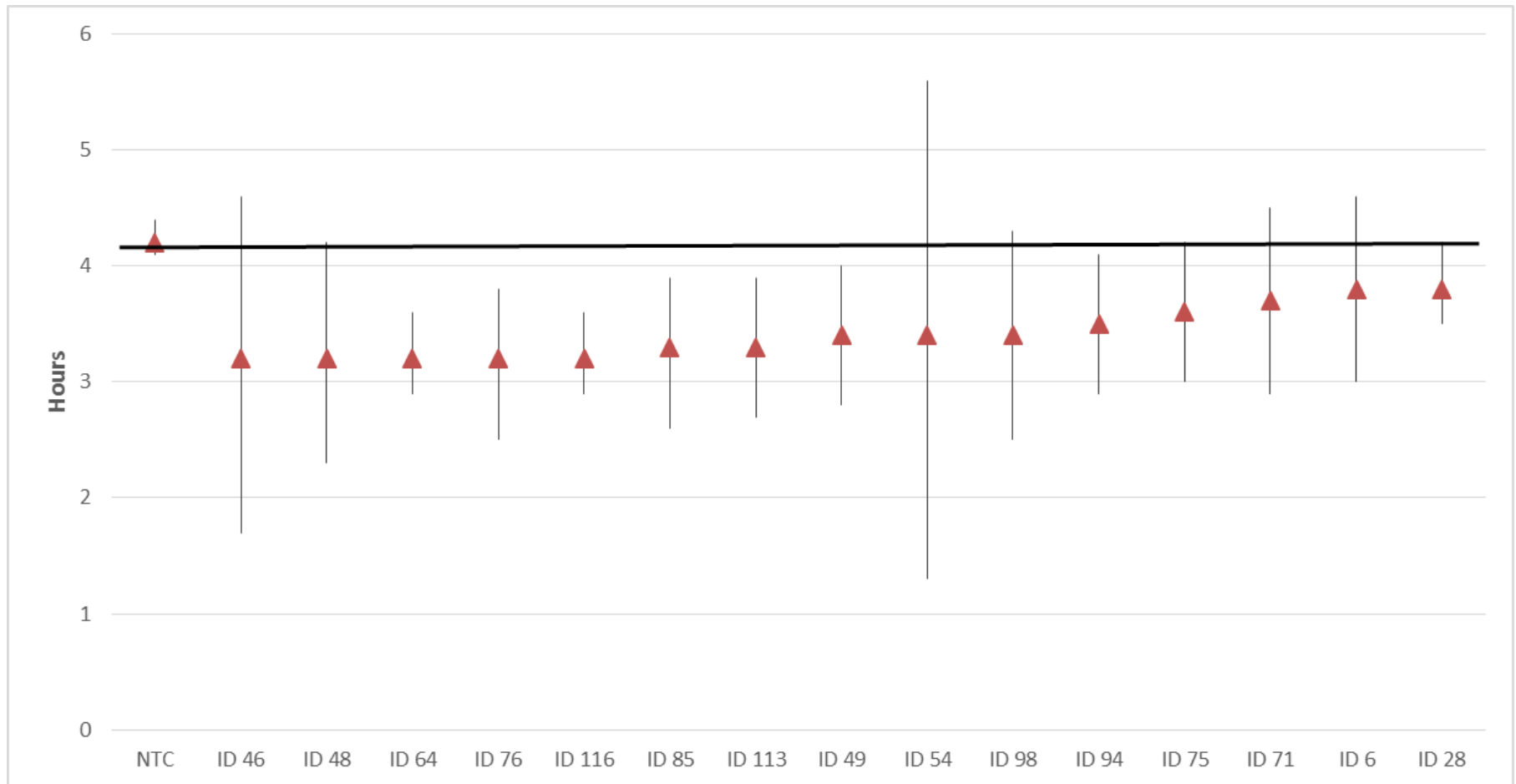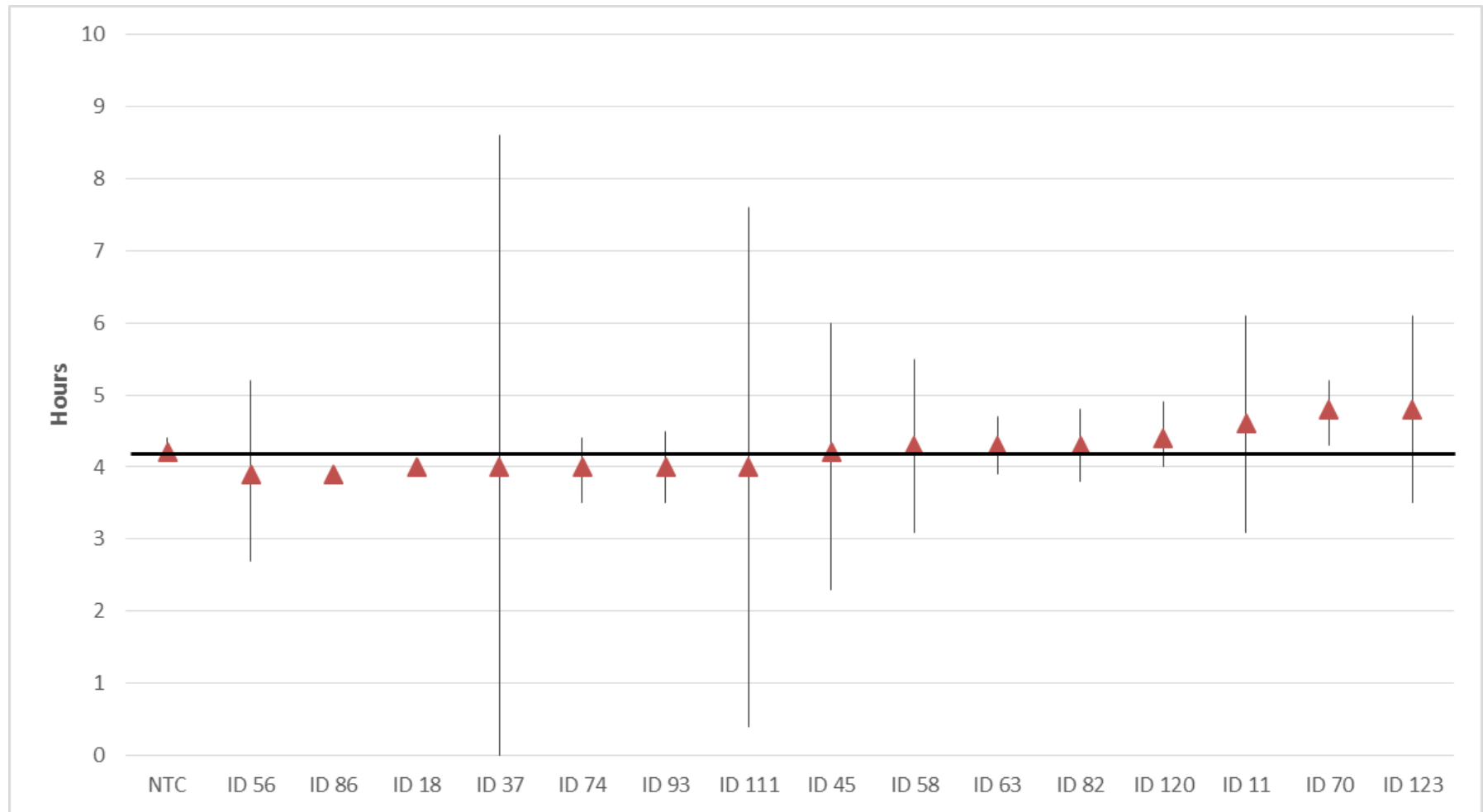**April 1, 2016—June 30, 2016**
9,188 Incidents

ED Disposition = Transferred

Average ED LOS (Hours)

	Indiana	Levels I and II	Level III	Non-Trauma Centers
Upper CL	3.7	2.9	3.2	3.8
▲ Mean	3.5	1.8	2.8	3.6
Lower CL	3.3	0.8	2.4	3.4

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED Disposition = Transferred

Level I and II Trauma Centers- Average ED LOS (Hours)

	Levels I and II	ID 104	ID 83
Upper CL	2.9	2.6	2.7
▲ Mean	1.8	1.6	2.7
Lower CL	0.8	0.5	2.7

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED Disposition = Transferred

Level III Trauma Centers- Average ED LOS (Hours)

	Level III	ID 105	ID 51	ID 107	ID 119
Upper CL	3.2	2.6	3.0	3.9	6.4
▲ Mean	2.8	2.1	2.6	3.3	3.9
Lower CL	2.4	1.7	2.2	2.6	1.4

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

ED Disposition=Transferred
Non-Trauma Centers
Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
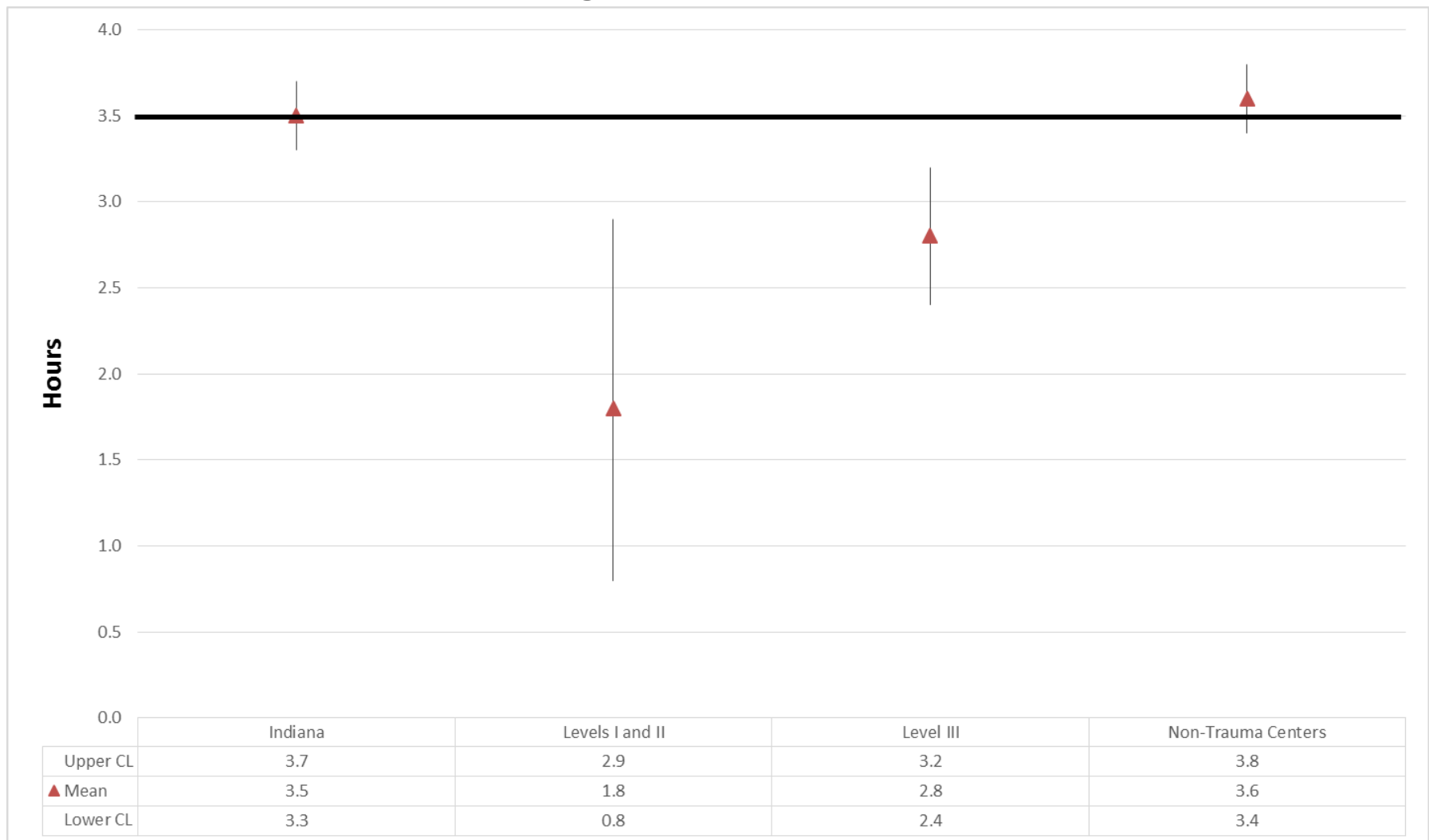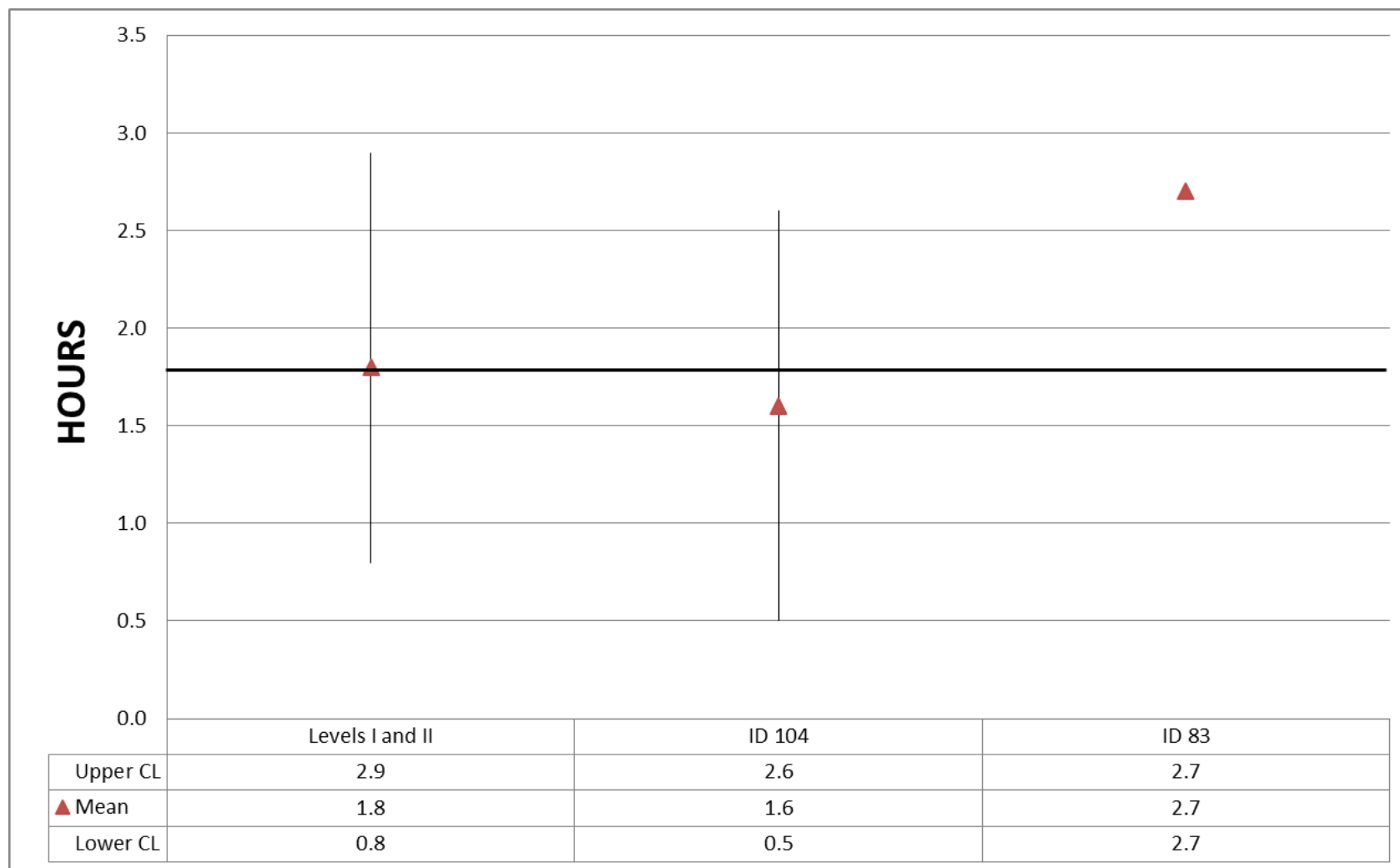9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED Disposition=Transferred
Non-Trauma Centers
Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
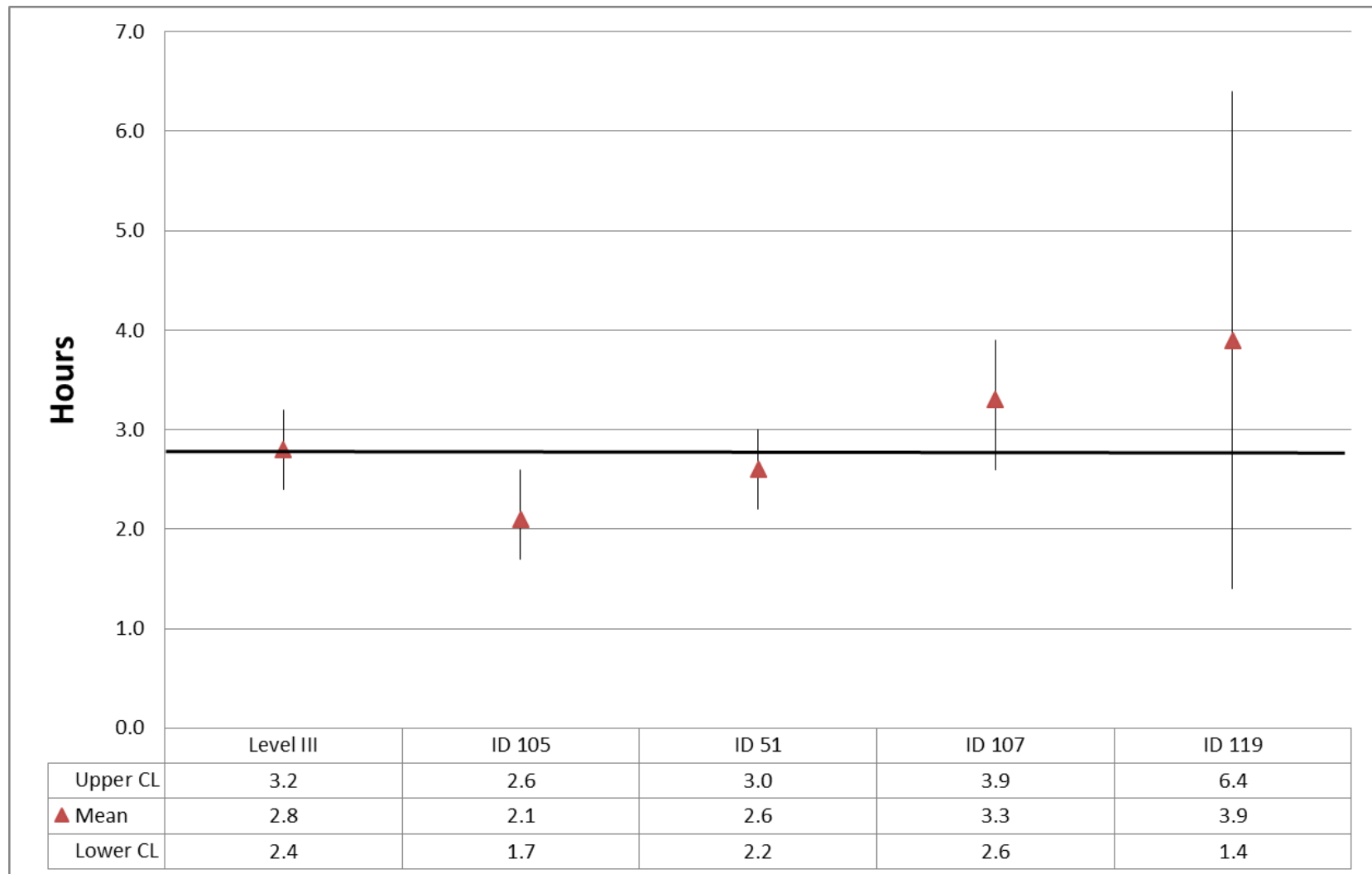9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED Disposition = Transferred
Non-Trauma Centers
Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
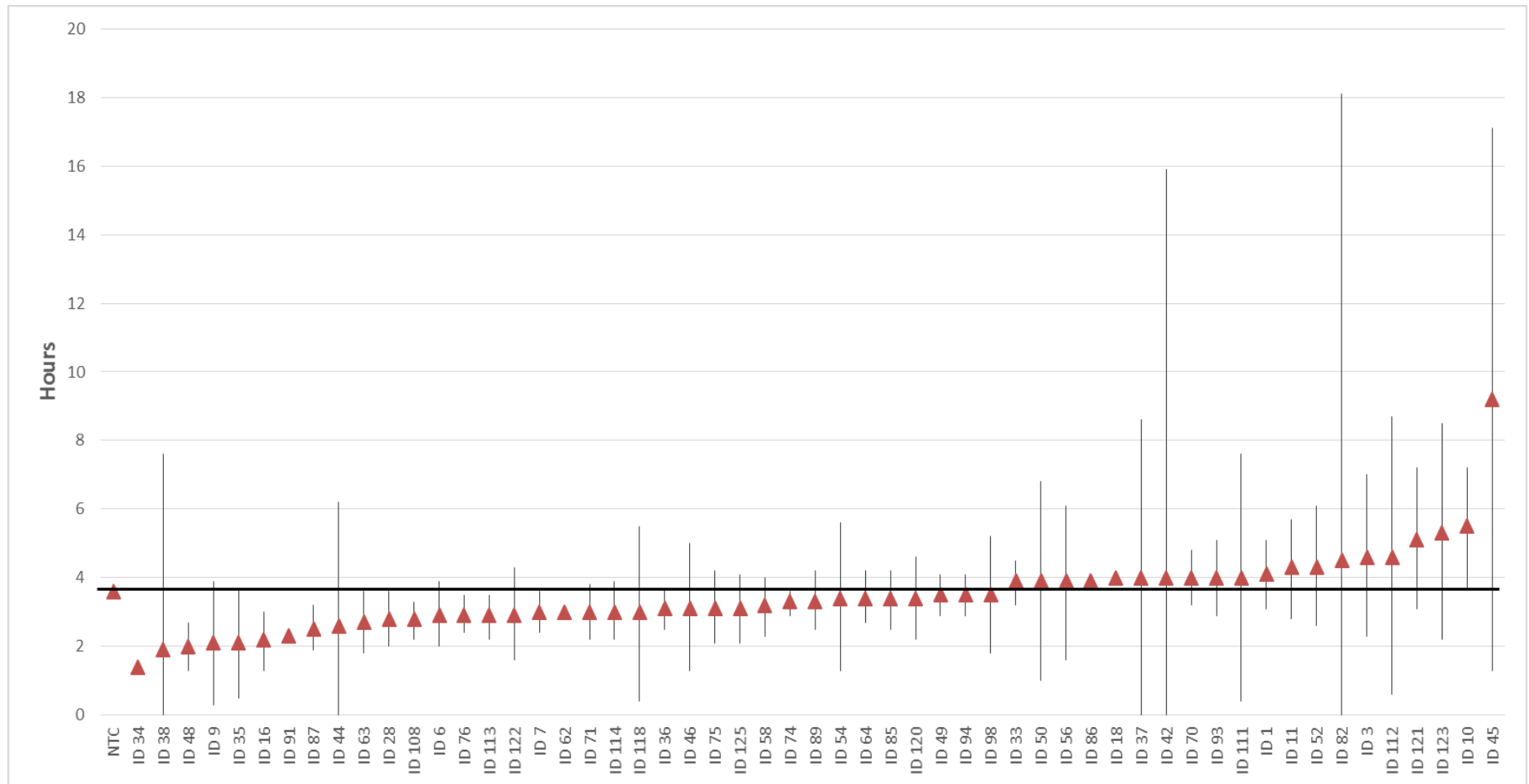April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED Disposition = Transferred
Non-Trauma Centers
Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
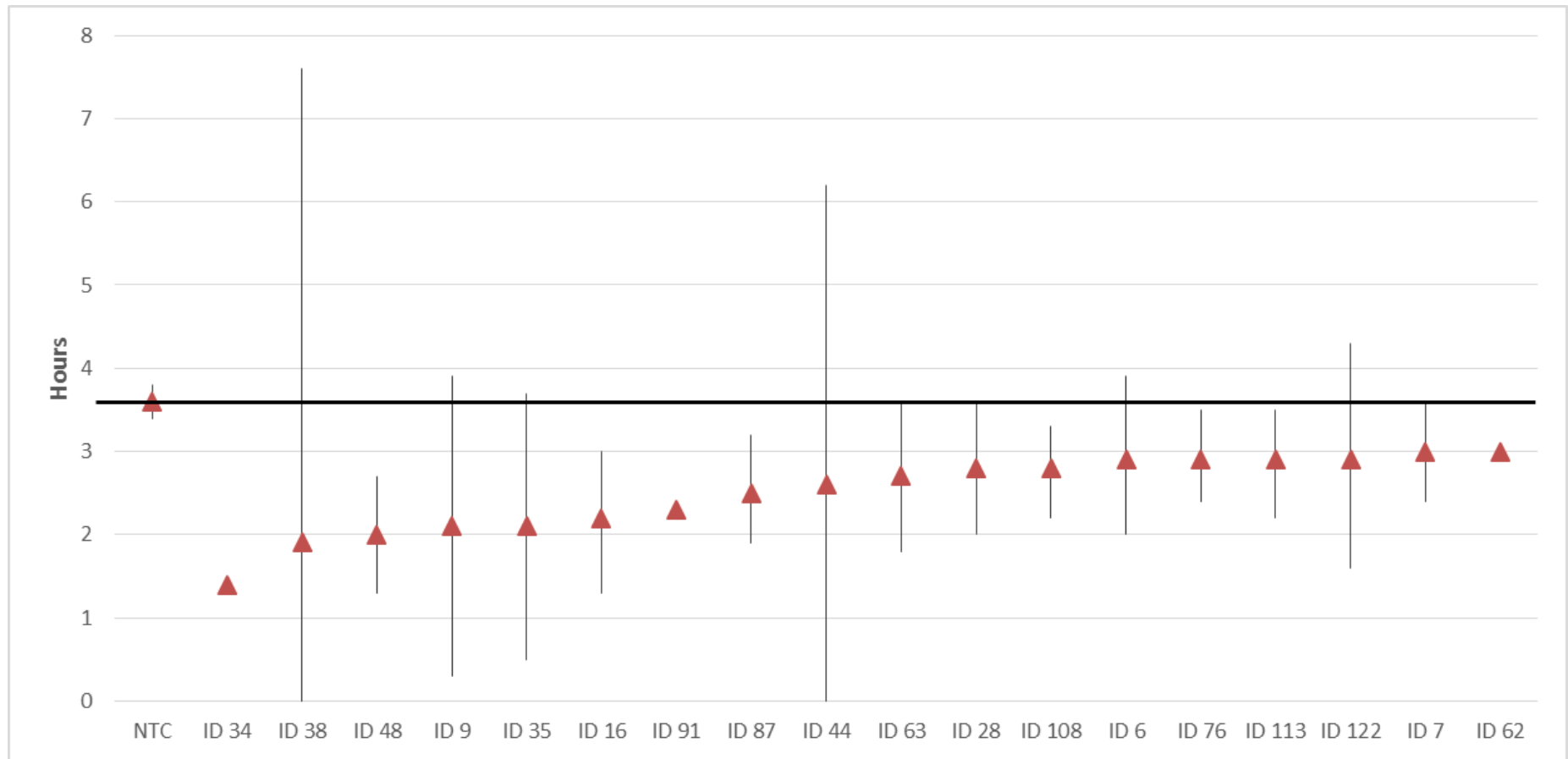April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Critical Patients, ED Disposition = Transferred

Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

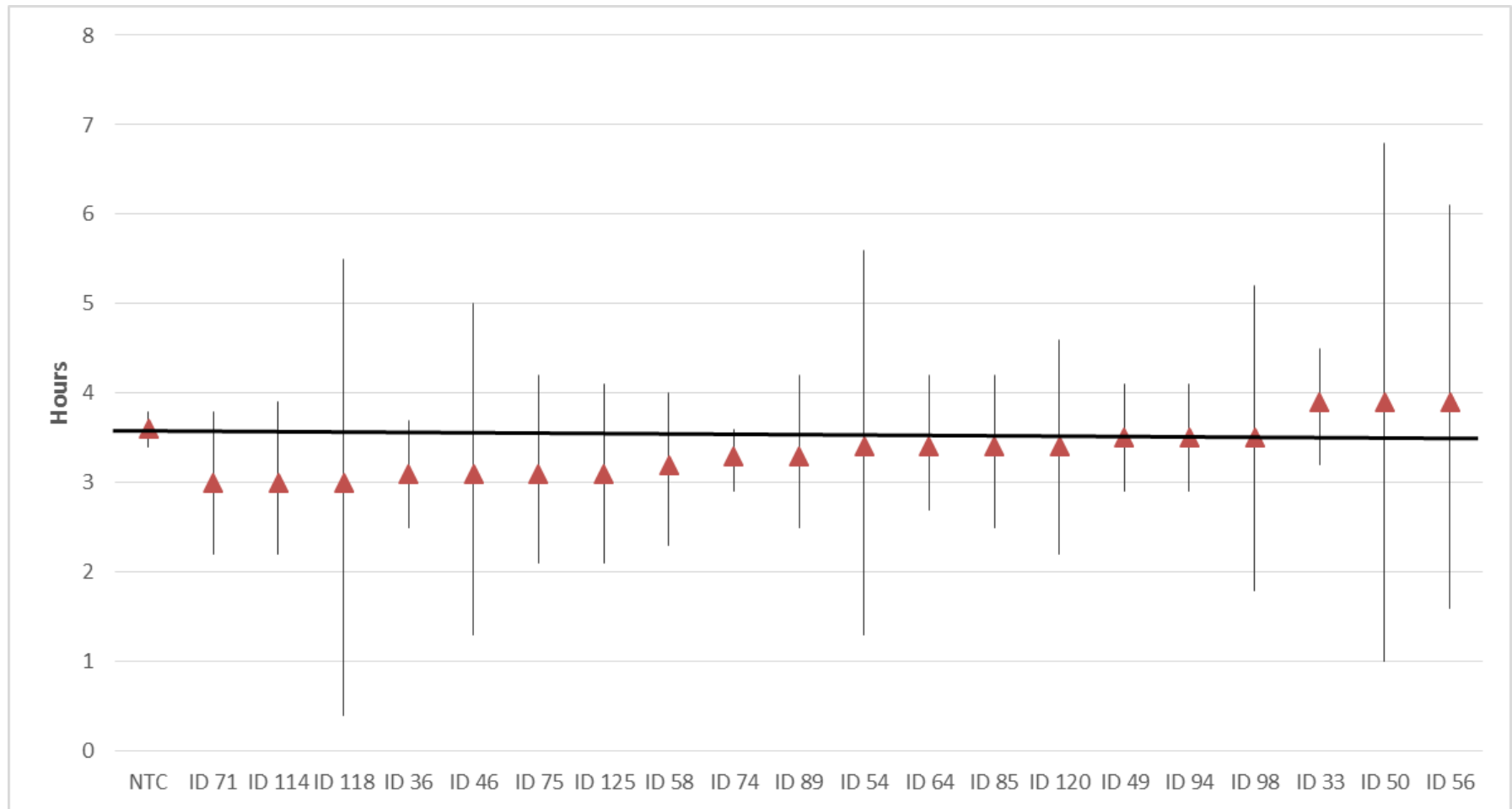**98 Total Hospitals Reporting**

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Critical Patients, ED Disposition = Transferred

Level I and II Trauma Centers - Average ED LOS (Hours)

	Levels I and II	ID 83
Upper CL	2.7	2.7
▲ Mean	2.7	2.7
Lower CL	2.7	2.7

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Critical Patients, ED Disposition = Transferred

Level III Trauma Centers - Average ED LOS (Hours)

	Level III	ID 105	ID 107	ID 51
Upper CL	3.6	2.5	3.7	3.0
▲ Mean	2.7	1.4	2.5	2.5
Lower CL	1.8	0.3	1.4	2.0

Indiana Trauma Registry

Statewide Quarter 2 Data Report

April 1, 2016—June 30, 2016

9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Critical Patients, ED Disposition = Transferred
Non-Trauma Centers - Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
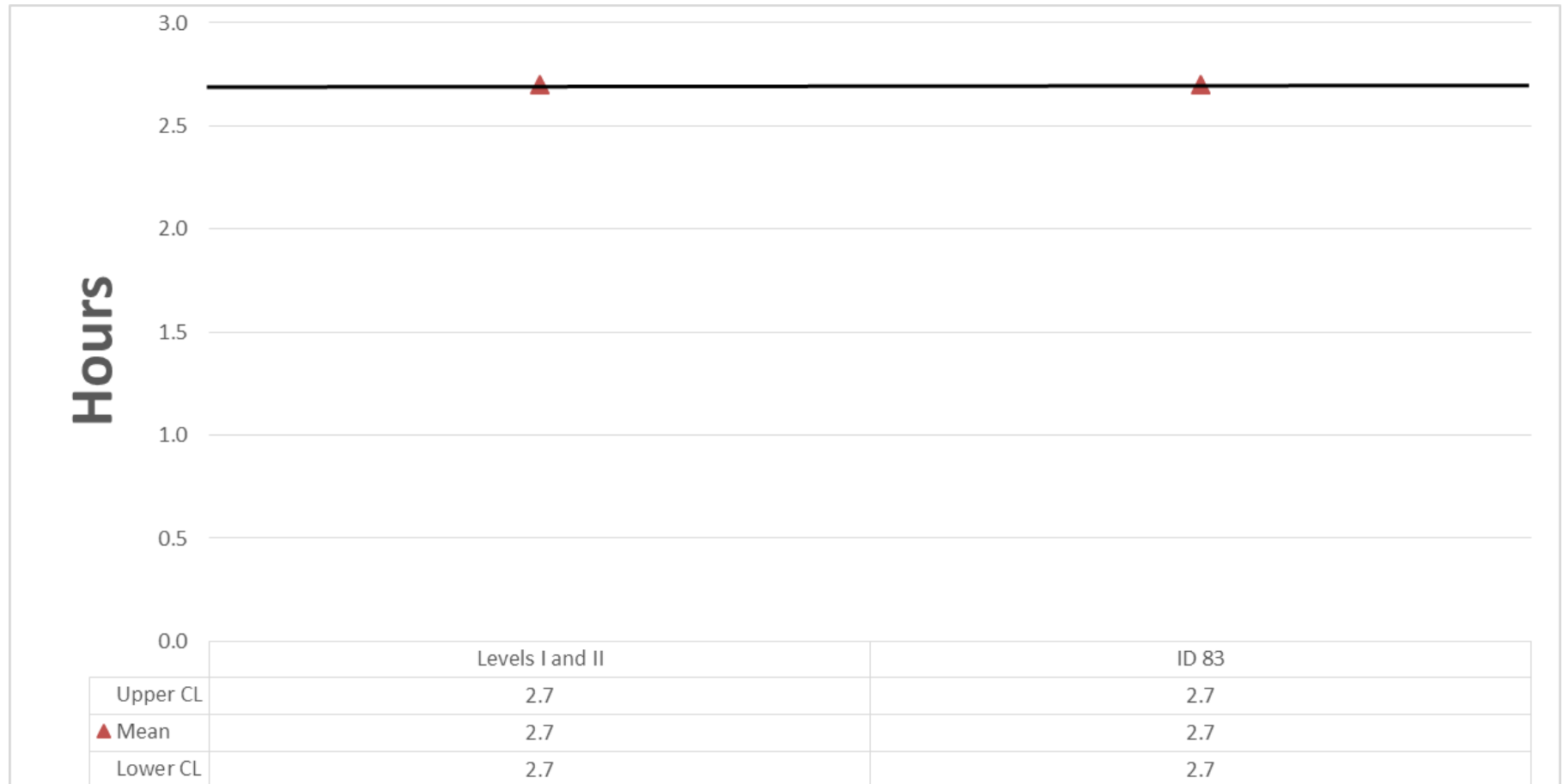9,188 Incidents

98 Total Hospitals Reporting
Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Critical Patients, ED Disposition = Transferred
Non-Trauma Centers - Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
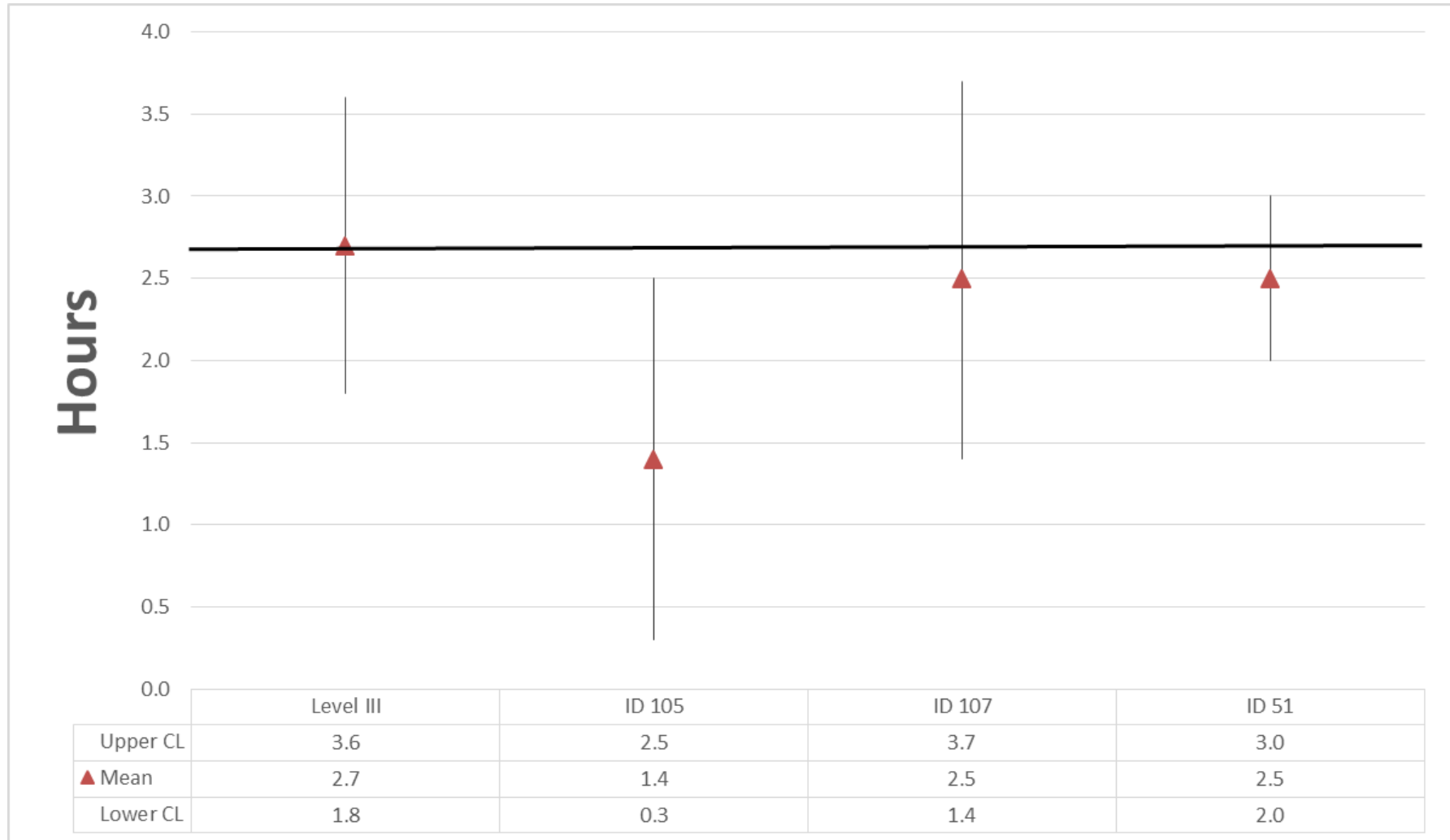9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

Critical Patients, ED Disposition = Transferred
Non-Trauma Centers - Average ED LOS (Hours)

Indiana Trauma Registry

Statewide Quarter 2 Data Report
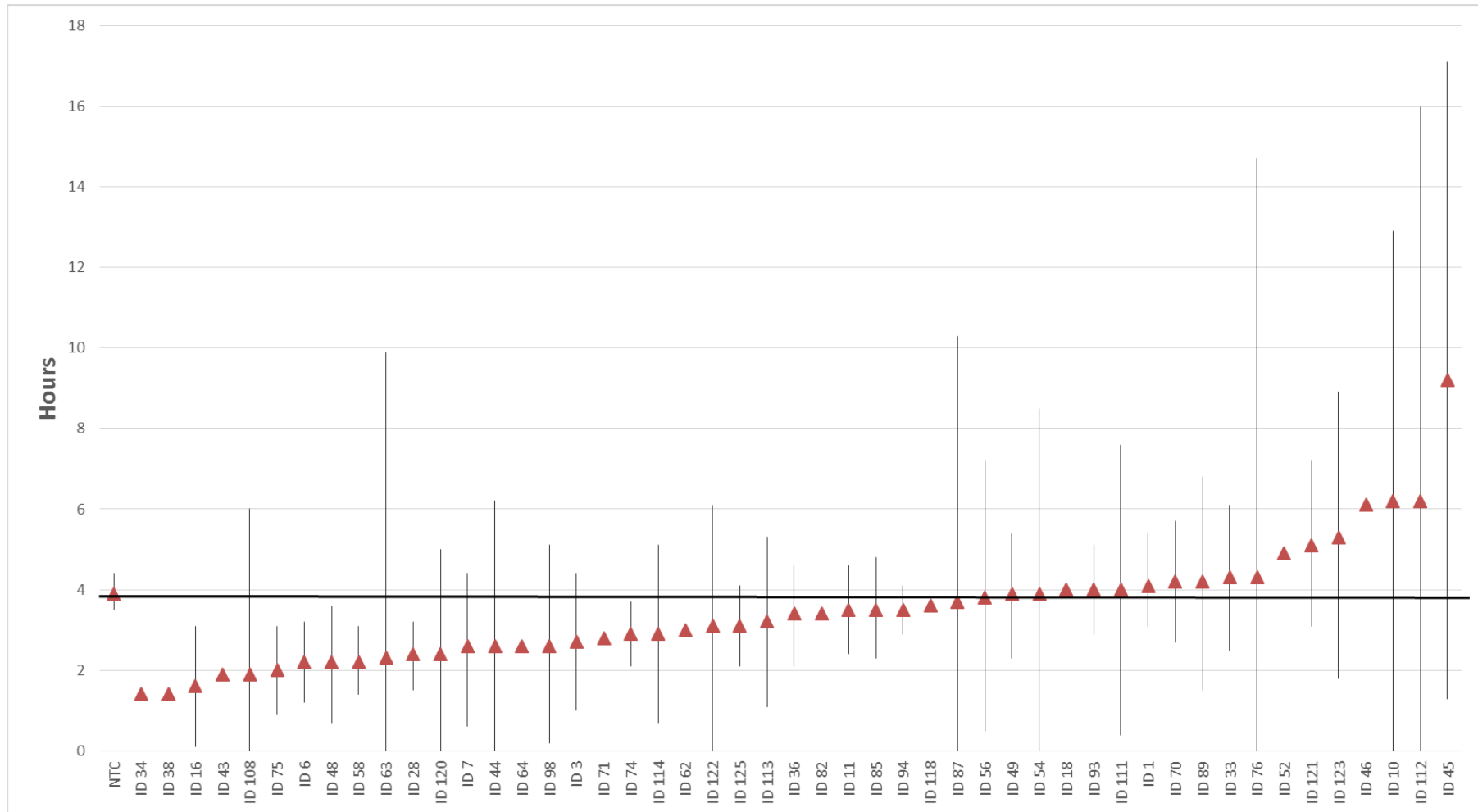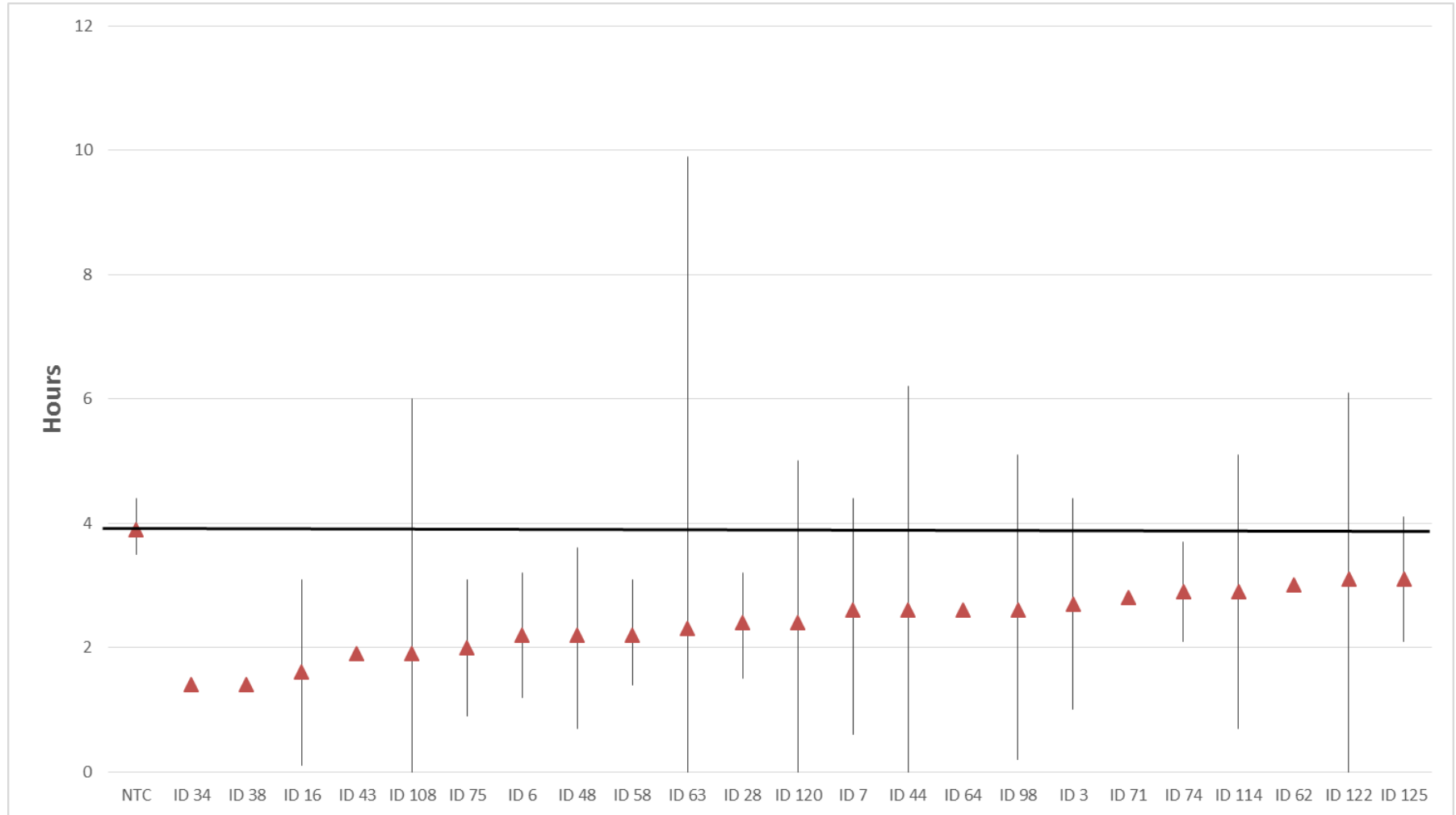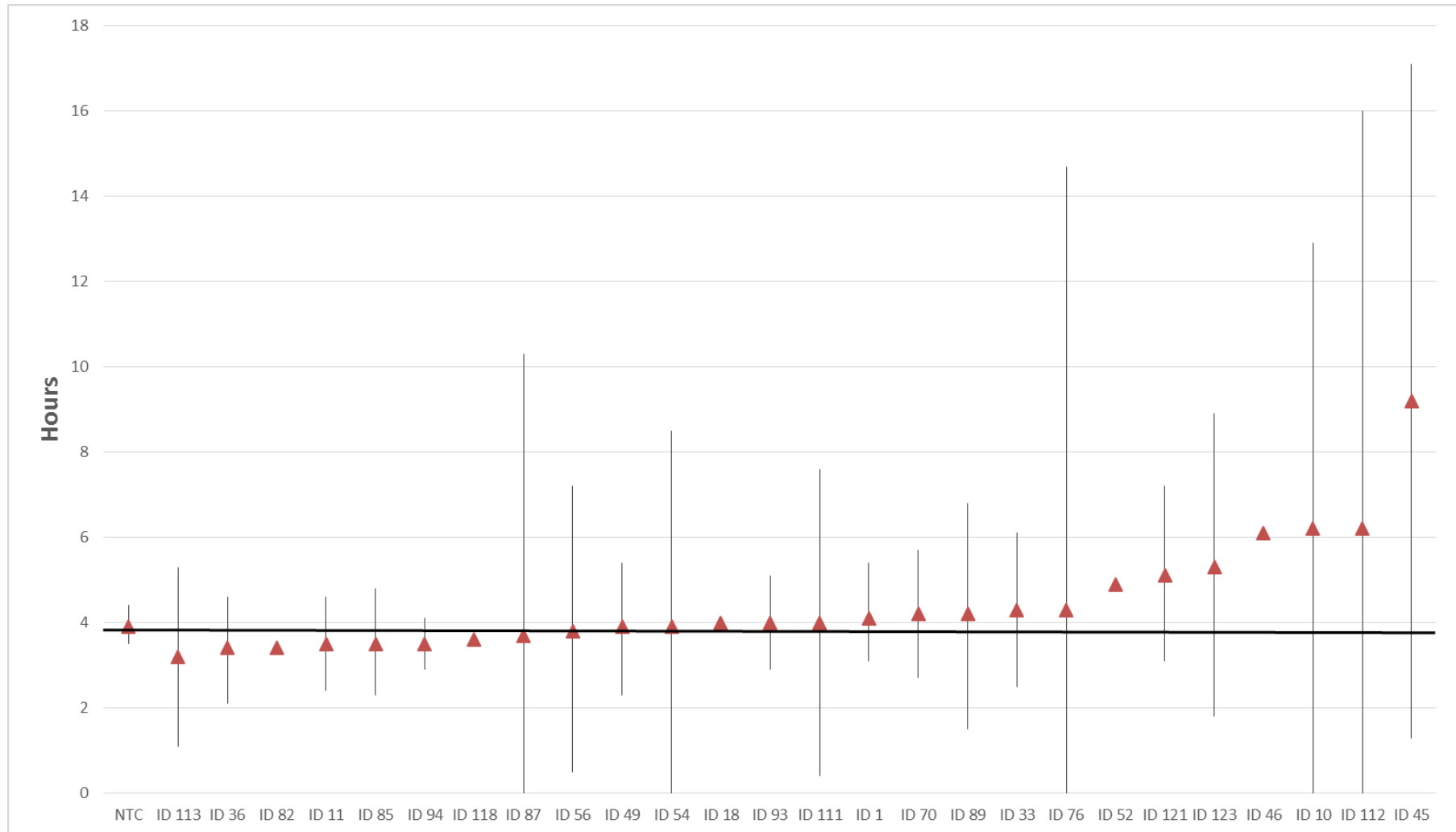April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED Length of Stay

ED Length of Stay (minutes)				
	Indiana Average	Level I and II	Level III	NTC
N=	4073	1265	665	2143
Average	223	174	195	261
Std. Deviation	199	162	164	220
Minimum	0	2	3	0
Quartile 1	142	131	150	150
Median	183	139	161	216
Quartile 3	296	311	288	288
Maximum	2041	1415	2041	1907

ED Disposition

ED Disposition (count)				
	Indiana	Level I and II	Level III	NTC
Floor Bed	3875	1781	573	1521
ICU	1109	926	98	85
Transferred	1676	64	315	1297
OR	749	568	92	89
Home w/o Services	373	212	65	96
Observation	467	286	37	144
Step-Down	481	241	73	167
Expired	70	31	17	22
NK/NR/NA	343	184	69	90
AMA	11	6	2	3
Home w/ Services	4	1	0	3
Other	30	24	6	0
Grand total	9188	4324	1347	3517

*A bar graph of ED Disposition is found on page 2.
*A bar graph of ED Length of Stay is found on page 2.

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting
Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED Length of Stay by ISS

ED Length of Stay (minutes)								
ISS Category	Indiana Average	Indiana Average	Level I and II	Level I and II	Level III	Level III	Non-Trauma Centers	Non-Trauma Centers
	Counts	**Minutes**	**Counts**	**Minutes**	**Counts**	**Minutes**	**Counts**	**Minutes**
1-8	1987	234	530	188	360	204	1097	266
9-15	1356	213	407	173	250	189	699	245
16-24	265	177	185	154	29	159	51	274
25-44	187	172	121	157	19	155	47	217
45-74	13	131	13	131	0	-	0	-
75	5	97	4	54	1	269	0	-
No ISS	258	280	5	155	6	145	247	286

*A Box and Whisker plot of ED Length of Stay by ISS is found on page 5.

Indiana Trauma Registry

Statewide Quarter 2 Data Report
April 1, 2016—June 30, 2016
9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	10 facilities	47.1% of data
Level III:	9 facilities	14.7% of data
(Non-Trauma) Hospitals:	79 facilities	38.3% of data

ED Disposition (count) by ISS Category

	Floor Bed	ICU	Transferred	OR	Observation	NK/NR/ NA	Step- Down	Home w/o Services	Expired	Other	AMA	Home w/ Services	Total
1-8	1925	319	962	372	345	137	220	340	18	26	9	4	4677
9-15	1650	380	445	220	94	167	174	23	12	3	1	0	3169
16-24	132	220	78	67	5	16	54	3	9	0	0	0	584
25-44	41	169	35	76	1	11	21	0	20	1	0	0	375
45-74	0	11	0	8	0	0	0	0	1	0	0	0	20
75	0	5	1	1	0	0	0	0	4	0	0	0	11
NO ISS	127	5	155	5	22	12	12	7	6	0	1	0	352
Total	3875	1109	1676	749	467	343	481	373	70	30	11	4	9188

*Bar graph of ED Disposition by ISS is found on page 22.

Indiana Trauma Registry

Statewide Quarter 2 Data Report

April 1, 2016—June 30, 2016

9,188 Incidents

98 Total Hospitals Reporting

Level I and II:	**10 facilities**	**47.1% of data**
Level III:	**9 facilities**	**14.7% of data**
(Non-Trauma) Hospitals:	**79 facilities**	**38.3% of data**

General Report:

     -The caterpillar plots with the anonymous ID's for all patients per hospital may be found on pages 29-36.

     -The caterpillar plots with the anonymous ID's for transferred patients per hospital may be found on pages 37-43.

     -The caterpillar plots with the anonymous ID's for critical transferred patients per hospital may be found on pages 44-49.

     -Reference tables now accompany the graphs for demographic data on pages 25-28 and 50-52.